THE AMERICAN JOURNAL of PSYCHIATRY

VOLUME 114
NUMBER 11
MAY 1958

Official Journal of
THE AMERICAN PSYCHIATRIC ASSOCIATION

1958 Annual Meeting, Civic Auditorium, San Francisco, Calif. • May 12-16, 1958

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[illegible]	18		6	33%	10	
[illegible]	46		16	35%	21	8
[illegible] and manic-depressive psychoses	13	2	5	41%	3	3
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AMERICAN JOURNAL OF PSYCHIATRY

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2. Hess, W. R.: Diencephalon. New York: Grune & Stratton, 1954.

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The American Journal of Psychiatry, formerly The American Journal of Insanity, the official organ of The American Psychiatric Association, was founded in 1844. It is published monthly, the volumes beginning with the July number.

The subscription rates are $12.00 to the volume: Canadian subscriptions, $12.50; foreign subscriptions, $13.00, including postage. Rates to medical students, junior and senior internes, residents in training during their first, second, or third training year, and also to graduate students in psychology, psychiatric social work, and psychiatric nursing, $5.00 (Canada $5.50). Single issues, $1.25.

Office of Publication, 1601 Edison Highway, Baltimore 13, Md.

Editorial communications, books for review, and exchanges should be addressed to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue West, Toronto 5, Ontario, Canada.

Business communications, remittances and subscriptions should be addressed to The American Psychiatric Association, 1601 Edison Highway, Baltimore 13, Md., or to 1270 Avenue of the Americas, New York 20, N. Y.

Entered as second class matter July 31, 1911, at the post office at Baltimore, Maryland, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized on July 3, 1918.

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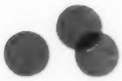

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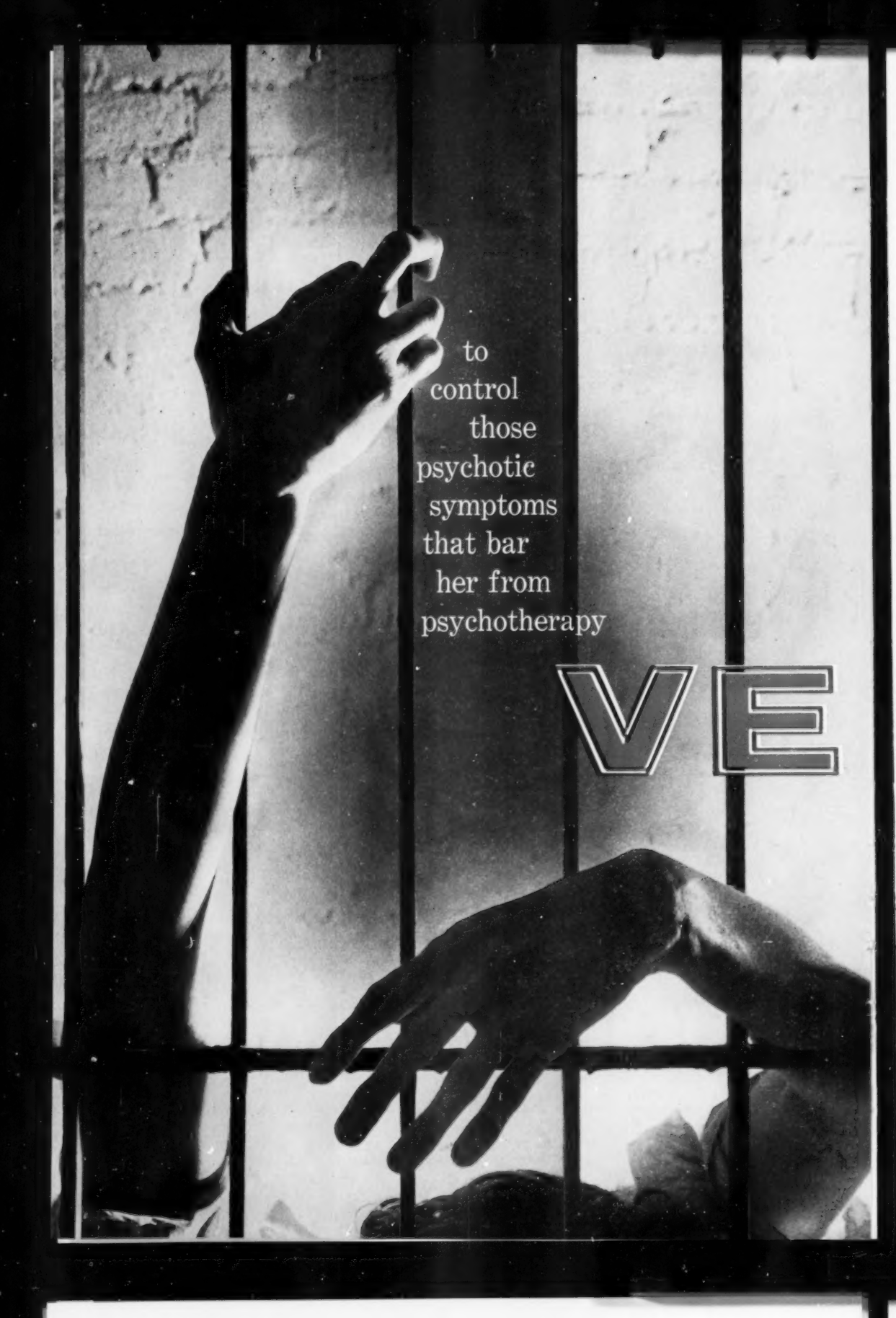
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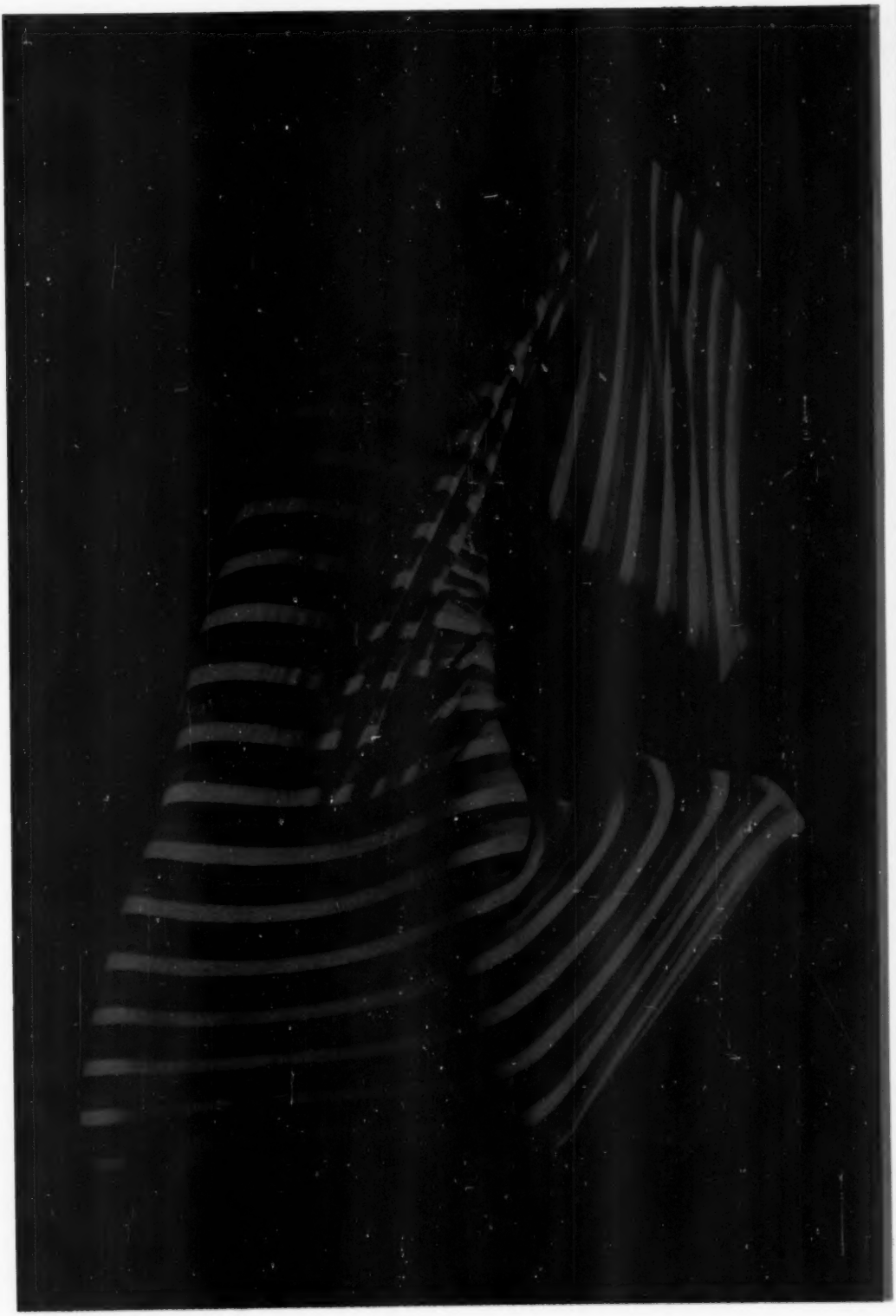

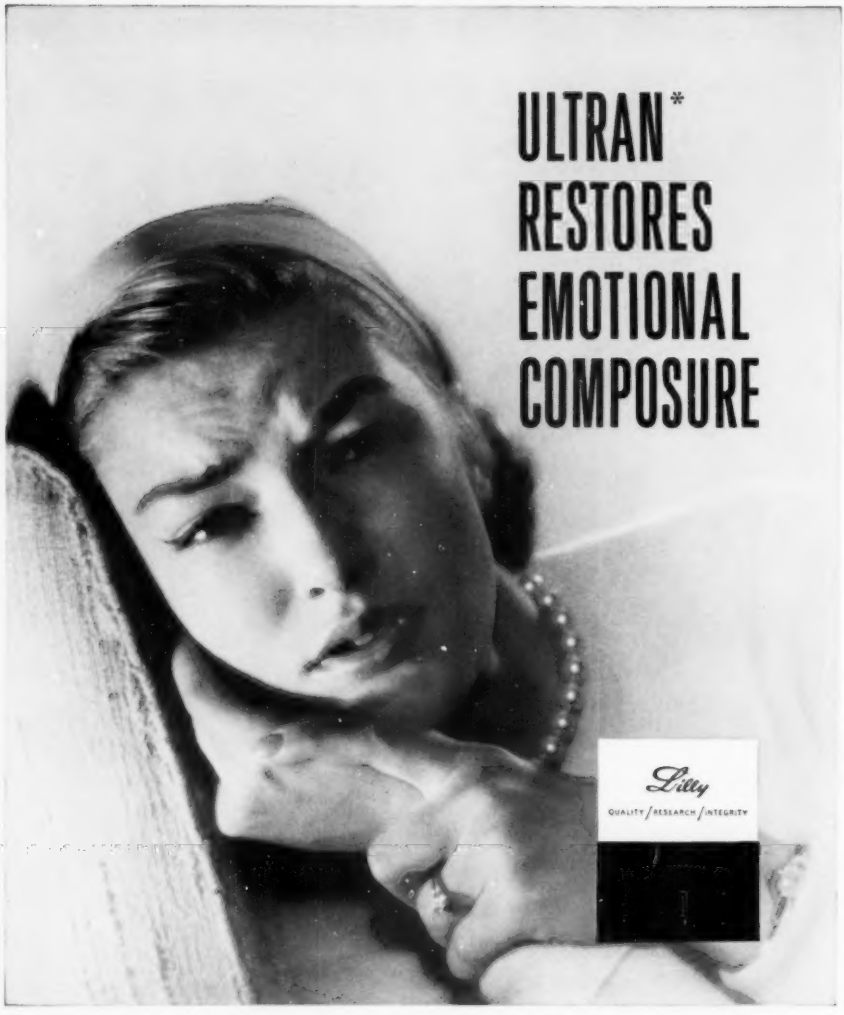

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THE RELATION OF CHILDHOOD BEHAVIOR PROBLEMS TO ADULT PSYCHIATRIC STATUS: A 30-YEAR FOLLOW-UP STUDY OF 150 SUBJECTS [1, 2]

PATRICIA O'NEAL, M.D., AND LEE N. ROBINS, PH.D.[3]

INTRODUCTION

There have been few studies which have followed children with behavior problems long enough to evaluate their adult psychiatric status(1, 2, 3, 4). Those which have followed children over a considerable period have sometimes evaluated their status at follow-up on the basis of a single criterion, for example, the proportion who have had legal difficulties during the follow-up period(5, 6). Without studies of their total psychiatric health as adults, it is difficult to evaluate therapy with disturbed children or the effects on them of manipulation of environment. Some reports claim that most childhood problems disappear with maturation(7); others, presenting similar figures for improvement, attribute the improvement to intervening therapy(8). To establish any sort of baseline for the expected outcome of childhood behavior problems, there must be available 1. a group of patients who have been thoroughly studied as children, 2. an opportunity to study them again as adults, 3. a control group of normal children who can be studied as adults in the same way as the patients. A control group permits distinguishing between psychiatric problems that arise independently of the original childhood problems and those attributable to a continuation of the original difficulty.

A follow-up study that meets these requirements is now in progress, utilizing the records of the St. Louis Municipal Psychiatric Clinic from the years 1924 through 1929, a matched control group of normal children, and detailed interviews with both patients and controls as adults.

[1] Read at the 113th annual meeting of The American Psychiatric Association, Chicago, Ill., May 13-17, 1957.

[2] Funds for this project have been provided by the Foundation's Fund for Research in Psychiatry and the United States Public Health Service, Grant Number M-1400.

[3] From the Department of Psychiatry and Neurology, Washington Univ. School of Med., St. Louis, Mo.

DESCRIPTION OF THE STUDY

The present report is concerned with the psychiatric diagnosis of 150 subjects seen in connection with the larger study. The larger study involves a follow-up of a consecutive series of 524 patients seen at the St. Louis Municipal Psychiatric Clinic between 1924 and 1929, and a comparison of their adult psychiatric and social status with that of 100 control subjects selected from the records of the St. Louis public schools.

Between January 1, 1924, and December 31, 1929, 2,505 patients were referred to the Municipal Psychiatric Clinic. Referrals came from the Juvenile Court, social agencies, schools, physicians, and parents. Children thus referred were given at least Stanford-Binet intelligence tests, a physical examination, including routine laboratory tests, an extensive social history and history of problem behavior taken from a related adult or the referring agency, and psychiatric examination. Only rarely was treatment undertaken. The clinic served primarily as an advisory agency to the source of referral. In most cases, records are extremely detailed. Only 524 of the patients referred, however, met the following criteria: 1. age 17 years or less at first clinic contact; 2. I.Q. not less than 80 (measured by Stanford-Binet); 3. Caucasian race; 4. referral because of problem behavior (not purely for placement or vocational advice), and 5. adequate work-up by the clinic staff. All who met these criteria were accepted as patient subjects.

A control group of 100 subjects was selected from the records of the St. Louis public schools to match the patient series with respect to sex, race, year of birth, place of residence, and I.Q. They were also required to show no obvious behavior disturbances as indicated by repeating more than one grade, excessive absences, or transfer to correctional institutions.

At the time of writing, the records of all the patients and controls have been checked

through the St. Louis Social Service Exchange for a history of social agency contacts, through police and mental hospital records; 85% have been located; and 150 have been interviewed. The interview consists of a structured two-part questionnaire, which provides for both closed and open-ended questions. The questionnaire requires approximately 2½ hours to administer. The first part deals principally with the subject's social history and adjustment and is administered by the social interviewer. The second part consists primarily of a medical and psychiatric symptom review and is administered by a psychiatrist.

This paper will discuss the current psychiatric diagnosis of the first 150 subjects interviewed and the relation between their current diagnosis and childhood behavior problems.

TABLE 1
CHARACTERISTICS OF THE PATIENT GROUP

	Interviewed 115	Total patient group
Sex:		
Male	70%	73%
Female	30	27
	100%	100%
Median age at referral	12 yrs., 11 mos.	13 yrs., 6 mos.
Median I.Q.	95	95
Breadwinner's occupation at time of referral:		
White collar	38%	38%
Labor, unemployed, unknown	62	62
	100%	100%
Type of behavior problem:		
Juvenile delinquent	30%	37%
Anti-social behavior	42	40
Neurotic	28	23
	100%	100%

CHARACTERISTICS OF THE 150 INTERVIEWED CASES

The group of the first 150 subjects interviewed contains 115 former patients of the Municipal Psychiatric Clinic and 35 control subjects. The patients interviewed so far are a representative cross-section of the total patient group with respect to sex, age, I.Q., socio-economic status, and nature of their childhood behavior problems. Both the total group of patients and the 115 reported in this paper are about 70% male (Table 1), came to the clinic at about age 13, had a median I.Q. score of 95, and come from a predominantly lower socio-economic background, with only 38% from white-collar families. They were also similar in the kinds of behavior problems they showed at the time of referral to the clinic. The patients have been divided into 3 groups on the basis of the description of their childhood behavior difficulties. Group I is the delinquent group, which includes any child who had experienced formal court action and had a court record when he was seen, regardless of other problems he might have. Delinquents make up 37% of the total patient group and 30% of the first 115 interviewed. Group II, the largest group, includes youngsters who had aggressive anti-social behavior similar to that which occurred in the delinquent group, but who had experienced no formal court action at the time of referral. Like Group I, Group II patients had a history of theft, running away, truancy, assault, destruction of property, incorrigibility, and sexual misbehavior. Some of them were pre-delinquent; others had less frequent or less public misdemeanors than Group I patients. Group II patients account for 40% of the total patient group, and 42% of the 115 so far interviewed. Group III, the smallest group, contains children referred for problems considered neurotic rather than anti-social. Included here were difficulties in learning and attention, excessive dependency, fears, tantrums, tics, eating problems, enuresis, or "nervousness." Group III patients make up 23% of the total patient group and 28% of the 115 patients interviewed.

The following abridged case histories of 3 of the patients who have been interviewed may clarify the kinds of behavior problems assigned to each of the 3 groups:

Group I—Delinquent: A 14-year-old boy was referred from the House of Detention after being apprehended following an afternoon of "joy riding" in a "borrowed automobile." His I.Q. was 85. The family had been supported by the mother since he was 5 years old, when his father had deserted. This boy had always been difficult for his mother to discipline. At the age of 10, he began to truant from school. At the age of 11, he first ran away from home, and by age 12 was taking trips lasting a week or two. He first came to the attention of the

Juvenile Court at the age of 12, when his mother filed a missing persons report. His mother again brought him to Court at age 13 because she could no longer discipline him. He was charged as "incorrigible" and put on probation. Shortly before the "joy-riding" episode, he had been expelled from school following a fight with a teacher.

He was said to lie pointlessly for the "sheer pleasure of lying." His manner was described as deceptively frank and disarming.

Group II—Non-delinquent, with aggressive antisocial behavior: A 12-year-old boy was referred by his aunt after the school had strongly urged that she seek some help for him. Despite an I.Q. of 123, his school performance had been erratic, and he had failing grades. He continually misbehaved at school in order to be the center of attention. He was truant at the age of 9. He had violent temper outbursts, during which he would throw things and strike people. For several years he had been stealing money from his aunt. He was reported to be "untruthful and dishonest about everything." During the past year he had threatened several times to kill everyone in the family and to kill himself.

Group III—Neurotic: An 8-year-old girl was referred by the school nurse. Her I.Q. was 106. Her parents were divorced when she was 5. The girl lived with her mother and maternal grandparents, all of whom were described as nervous, moody, and unstable. She had no particular learning problems at school but acted peculiarly in class. She interrupted the class by screaming without reason and dancing around the school room. She also had temper tantrums, during which she bit herself and other children.

The patients on whom this paper is based differ strikingly from the total study group in only two ways: 1. No cases of patients who have died are included. In the total group, 13% of the patients and 9% of the controls have died during the follow-up period. 2. Subjects who are still in St. Louis comprise a higher proportion of the first 150 interviewed than they do of the total group. In the total group, 58% of the patients and 76% of the controls are now in the St. Louis area. Of those already interviewed, 87% of the patients and 97% of the controls live in or near St. Louis.

RESULTS

The findings which this paper will discuss are 1. how many of the patients are psychiatrically sick or well at the time of follow-up; 2. how their adult psychiatric status is related to their childhood behavior problems; 3. how their adult psychiatric status is related to childhood home environment; and 4. how much psychiatric treatment they have received since their referral to the clinic. Results have not been treated statistically as this is a preliminary report.

Current Diagnosis.—Diagnosis of the patients, based on the medical and psychiatric history obtained by the psychiatrist during the second part of the interview, has been made according to the criteria listed in the *Diagnostic and Statistical Manual of Mental Disorder*(9). Each of 3 psychiatrists independently reviews the information obtained and makes a diagnosis. Differences in diagnosis are then discussed. At least 2 out of 3 must agree on a diagnosis before the patient is placed in that category.

While the criteria presented in the Manual are used for making positive diagnoses, it has been found more difficult to establish criteria for the "no psychiatric disease" and "undiagnosed" categories. A subject has been labeled "no psychiatric disease" only when he neither has nor has ever had 1. a group of symptoms that could be put into any of the standard diagnostic categories, 2. more than 3 symptoms which could possibly be construed as psychiatric symptoms, including vague somatic complaints, complaints of tension, and lability, or 3. even one symptom sufficiently disabling to cause him to seek medical help or to interfere with his work or desired activity.

A subject was labeled "undiagnosed" when he had more symptomatology than permitted under the criteria listed "no psychiatric disease," but 1. his symptoms fit none of the defined psychiatric entities, and 2. the 3 psychiatrists involved could not agree on a psychiatric diagnosis.

Among patients, 21% were found in the "no psychiatric disease" category, as compared with 60% of the control subjects (Table 2). Among the patients, 10% were thought to be psychiatrically ill but undiagnosed, and among the controls, 9% were undiagnosed. In both patient and control groups, there were 3% about whom insufficient information was available to make a judgment as to psychiatric health or illness. Among the patients, 27% were judged to be neurotic, 18% psychotic, 15% sociopathic personalities, and 3% alcoholic. Among controls, there was approximately the same pro-

TABLE 2
CURRENT DIAGNOSIS

	Patients	Controls
Neurotic reaction	27%	23%
Anxiety reaction	11%	9%
Conversion reaction	4	0
Depressive reaction	2	0
Undiagnosed neurosis	10	14
Psychotic reaction	18	3
Chronic brain syndrome	2	0
Schizophrenia	12	0
Manic-depressive	2	3
Undiagnosed psychosis	2	0
Sociopathic personality	15	0
Alcoholism	3	3
Other	3	0
Feebleminded	1	0
Gross stress reaction	1	0
Personality disturbance	1	0
Undiagnosed	10	9
No psychiatric disease	21	60
Insufficient information	3	3
	100%	100%
	N = 115	N = 35

TABLE 3
RELATION OF CHILDHOOD BEHAVIOR PROBLEMS TO CURRENT DIAGNOSIS

Current diagnosis	Classification by childhood behavior problems: Group I (Delinquent)	Group II (Anti-social)	Group III (Neurotic)	Controls
Neurotic reaction	14%	30%	37%	23%
Psychotic reaction	6	30	15	3
Sociopathic personality	37	6	3	0
Alcoholism	9	0	0	3
Other	3	4	3	0
Undiagnosed	11	11	6	9
No psychiatric disease	14	19	30	60
Insufficient information	6	0	6	3
	100%	100%	100%	100%
	N = 35	N = 47	N = 33	N = 35

portion of neurotic reactions (23%), but only 3% psychotic, no sociopathic personalities, and 3% alcoholic. Clearly, the former patients produce many more psychiatrically ill adults than does a group of normal controls, and the increment is in the more seriously incapacitating psychiatric diseases.

Relation of current diagnosis to childhood behavior problems.—Group I, the former juvenile delinquent group, has the smallest proportion of well patients, 14% (Table 3). The single diagnostic category to which the former juvenile delinquents make the largest contribution is sociopathic personality, a diagnosis made in 37% of this group. A diagnosis of neurosis was made in 14% of this group, psychosis in 6%, alcoholism in 9%. In 11%, considered psychiatrically ill, no diagnosis could be made. It will be noted that Group I produced few adults with psychotic reactions. The relatively low rate of alcoholism refers only to those in whom alcoholism was the primary psychiatric syndrome. Many of those diagnosed sociopathic personality had excessive alcohol intake, but in a context of anti-social behavior which invaded most spheres of their lives.

Group II, those with anti-social behavior but no juvenile court record, has 19% with no psychiatric disease. This group contributes equally to neurotic and psychotic diagnostic categories, with 30% in each. Only 6% were diagnosed sociopathic personality. It is interesting that all of those so diagnosed, while not juvenile delinquents at the time of referral to the clinic, did come before the Juvenile Court later. No cases of alcoholism were found in this group. The undiagnosed category accounted for 11%.

Group III, those with neurotic problems as children, produced the highest proportion of well adults among the patient groups, with 30% without psychiatric disease. This figure is still, however, substantially lower than the proportion well in the control group, 60%. Like Group II, Group III contributes substantially to the adults diagnosed neurotic (37%), but does not contribute so heavily to the psychotic group (15%). There is one sociopathic individual, but no alcoholics.

Differences between these 3 groups in the proportion of adults without psychiatric disease and in the proportions contributed to the various diagnostic groups indicate that the kinds of behavior problems which these patients exhibited as children are prognostic of their adult psychiatric status.

In order to examine more fully how particular kinds of behavior in childhood are related to adult psychiatric status, the immediate item of problem behavior which had

TABLE 4

RELATION OF PRESENTING COMPLAINT IN CHILDHOOD TO CURRENT PSYCHIATRIC STATUS

Current diagnosis	Theft	Destruction of property	Truancy	Incorrigibility	Running away	Fighting	Learning problems	Sexual misbehavior	Tantrums	Neurotic traits
Neurotic reaction	26%	0	12%	30%	20%	0	53%	53%	44%	38%
Psychotic reaction	10	17%	37	35	25	33%	7	7	14	21
Sociopathic personality	32	33	25	13	25	17	0	13	14	4
Alcoholism	6	0	0	0	5	0	0	0	0	4
Other	3	0	0	9	0	0	7	0	0	0
Undiagnosed	13	33	13	0	20	0	20	0	0	0
No psychiatric disease	10	17	13	13	5	50	13	27	28	25
Insufficient information	0	0	0	0	0	0	0	0	0	8
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	N = 31	N = 6	N = 8	N = 23	N = 20	N = 6	N = 15	N = 15	N = 9	N = 24

caused referral to the clinic as a child was related to his current psychiatric diagnosis. It was found that children referred because of theft or destruction of property contributed most to the number of adults diagnosed sociopathic personalities (Table 4). Those referred for truancy, incorrigibility, running away, and fighting were the ones most likely to show psychotic reactions as adults. Learning problems, sexual misbehavior, and tantrums were associated with neurosis in adult life. While some children in every category of the presenting behavior problems had no psychiatric disease as adults, those who were seen as runaways had the lowest rate of adult psychiatric health; those seen for fighting, the classic neurotic traits of childhood, tantrums, and sexual misbehavior had the highest rate of well adults. At the present time, too few interviews have been collected to provide sufficient cases of each kind of presenting complaint to permit confidence in these relationships, but it appears that certain kinds of childhood behavior problems are associated with particular psychiatric diseases in adult life. Further analysis of the childhood symptoms of these subjects will indicate whether patterns of symptoms may not be more specifically related to adult psychiatric status than is the immediate symptom which led to referral.

Relation of childhood home environment to adult psychiatric status.—Finding that adult psychiatric status was related to the groups to which patients were assigned on the basis of their childhood behavior problems raises the question whether the differences found might be attributable to other factors related to childhood behavior problems than to the behavior problems *per se*. Analysis of the original clinic records had indicated that the home environment of these children was related to their behavior problems in two ways: 1. those with neurotic problems came from a better socio-economic background, as judged by occupation of the father or breadwinner (Table 5), and 2. children in Group II came more often from broken homes than children in Group I or III (Table 6). Was it possible that the relatively good outcome of the children in Group III did not indicate that neurotic problems are less serious in childhood than anti-social behavior or delinquency, but rather that these children do better because they come from more secure homes, financially and emotionally?

When the socio-economic level in childhood was related to adult psychiatric status

TABLE 5

CHILDHOOD SOCIO-ECONOMIC STATUS

Occupation of breadwinner	Group I	Group II	Group III
Labor, unemployed, farmer	77%	68%	55%
White collar	23	32	45
	100%	100%	100%
	N = 35	N = 47	N = 33

TABLE 6

PREVALENCE OF BROKEN HOMES BEFORE EIGHTEENTH BIRTHDAY

	Group I	Group II	Group III	Controls
Unbroken	46%	28%	58%	68%
Broken	46	66	42	32
By Parents'				
Death	17	43	30	32
Desertion, divorce	26	19	9	0
Illness	3	2	3	0
Incarceration	0	2	0	0
No information	8	6	0	0
	100%	100%	100%	100%
	N = 35	N = 47	N = 33	N = 35

within each group, however, it was found (Table 7) that the upper levels, those whose breadwinner in childhood had been at white-collar level or better, had no higher a proportion without psychiatric disease as adults than the lower socio-economic levels. In fact, in Group II, the lower socio-economic levels have more adults without psychiatric disease than the upper levels.

Similarly, when the rate of broken homes was related to adult psychiatric status within each group, it was found (Table 8) that subjects from homes broken either by death or by separation and divorce were at least as often free of psychiatric disease as adults as those from unbroken homes. In fact, among both controls and patients, those from homes broken by death have fewer psychiatrically ill adults than those from unbroken homes. Patients from homes broken by separation and divorce do less well than those with homes broken by death, but not strikingly less well than those from unbroken homes.

These two measures, occupation of the

TABLE 7

RELATION OF SOCIO-ECONOMIC STATUS IN CHILDHOOD TO ADULT PSYCHIATRIC HEALTH

	Occupation of breadwinner					
	Group I		Group II		Group III	
Current diagnosis	White collar	Labor, farmer, unemployed	White collar	Labor, farmer, unemployed	White collar	Labor, farmer, unemployed
Well	12%	15%	7%	31%	33%	28%
Not well	88	85	93	69	67	61
Insufficient information	0	0	0	0	0	11
	100%	100%	100%	100%	100%	100%
	N = 8	N = 27	N = 15	N = 32	N = 15	N = 18

TABLE 8

RELATIONSHIP OF BROKEN HOMES TO ADULT HEALTH

	Childhood Home					
	Patients			Controls		
Current diagnosis	Broken by death	Broken by divorce or separation	Not broken	Broken by death	Broken by divorce or separation	Not broken
Well	30%	14%	18%	62%	100%	69%
Not well	67	83	80	38	0	27
Insufficient information	3	3	2	0	0	4
	100%	100%	100%	100%	100%	100%
	N = 30	N = 35	N = 50	N = 8	N = 1	N = 26

breadwinner and rate of broken homes, do not, of course, adequately evaluate the home environment from which these subjects came. Further analysis of their clinic records will permit a better evaluation. At this time, however, it seems probable that such factors in the home environment are related to the development of behavior problems in childhood, but once the disease is under way, they are not useful in predicting whether disturbed children will or will not be well in adult life. Children from the upper classes and from unbroken homes rarely develop psychiatric disturbance in childhood, but when they do, their chances of psychiatric health in adult life are no better than those who developed their childhood behavior problems in a less advantageous social setting.

Psychiatric treatment.—Although there is a high rate of diagnosable psychiatric disease among the former patients of the clinic, few of them had any further treatment after leaving the clinic.

Of the 35 patients in Group I, only 2 have had any outpatient contact, and these 2 saw a psychiatrist less than 5 times. One patient, a schizophrenic, has been in a public mental hospital for many years. There remain 25 (89% of those psychiatrically ill) who have never had any treatment.

The 47 patients in Group II have had slightly more psychiatric care, but still very little. Two patients have seen psychiatrists only for a diagnostic interview; another started outpatient treatment but has seen the psychiatrist less than 5 times. Four patients have actually had some psychotherapy as outpatients. One patient, diagnosed as psychotic depression, has been in a private mental hospital, and 5 have been patients in public psychiatric hospitals. There remain 24 (65% of those psychiatrically ill) in this group who are untreated.

Among the 33 patients in Group III, there has again been little psychiatric treatment. One person has seen a psychiatrist for diagnostic purposes, and 4 more have seen a psychiatrist less than 5 times. Two have been treated in public psychiatric institutions. There remain 13 (65% of those psychiatrically ill) in this group who are untreated.

In the control group of 35, only 2 persons have sought psychiatric help, and they have each seen a psychiatrist less than 5 times. No control subject has been hospitalized for mental illness or received psychotherapy. In the control group there remain 11 (85% of those psychiatrically ill) untreated.

While former patients from Group II and Group III have had somewhat more psychiatric help than patients from Group I or controls, the striking finding is that few from any group have had psychiatric treatment. What psychiatric care is given appears to go primarily to those with psychotic reactions and, to a lesser extent, to those with neurotic reactions. Psychiatric diseases which imply largely social maladjustment, *i.e.*, alcoholism and sociopathic personality, are simply not treated.

Discussion

The comparison of the rate of psychiatric disease in a group of ex-patients of a children's psychiatric clinic with that in a group of normal controls indicates that the problems for which children are seen are frequently the first symptoms of serious, lifelong psychiatric disease. The juvenile delinquent often matures into the sociopathic personality; the incorrigible runaway or truant may end as a schizophrenic. In the virtual absence of any attempts at therapy with these children, it is not possible to say whether the course of their disease could have been altered, but given the conditions under which they matured, a high proportion fail to "outgrow" their childhood problems.

While the prevalence of psychiatric disease is high in this group, psychiatric care of any kind is infrequent. Only the most grossly disturbed psychotic individuals have been treated with a high frequency. While sociopathic, psychotic, and alcoholic patients may not perceive themselves as sick, and therefore not seek medical aid, it is striking how few of the neurotic patients, many of whom have subjectively disturbing or disabling symptoms, seek any kind of help. They consider themselves "nervous," but feel they should learn to live with their symptoms. It will be interesting in further study to discover to what extent this failure to seek treatment is a function of the low social class of the patient group as a whole(12).

It is striking that the very group of patients most likely to reach adult life without psychiatric disease, those with neurotic behavior in childhood, are just the ones who are most likely to reach the private psychiatrist's office as children, while the group most likely to have adult psychiatric difficulties, the juvenile delinquents, are largely handled by the courts rather than the medical profession. It is our impression that the relatively good rate of success of this group with neurotic problems in childhood is partly a function of the differential access to psychiatric help of the various social classes. Many of the children from white-collar families were referred for behavior problems that appear innocuous as compared with the problems seen in children from lower class families. With a less virulent initial illness, it is not surprising that they should have a better prognosis. Children with similar problems at a lower socio-economic level would probably never have been referred to the clinic.

It is interesting that the control group, picked purely on the basis of having no striking difficulties at school, should present no cases of sociopathic personality or schizophrenia. While there are too few cases to conclude from this that these diseases do not occur in the absence of a history of school difficulties, it seems well worth investigating to what extent the grammar school record might be used in predicting adult psychiatric health. The simple criteria used to choose the control subjects—no excessive absences, no full grade repeated, no disciplinary action recorded, and an I.Q. of 80 or better—have yielded a strikingly healthy group. Other studies of the incidence of psychiatric disease in a normal population have reported figures as high as 81% ill(13). Our control group had only 40% ill. Our method of selection has, of course, eliminated feeblemindedness and senility as possible diseases, but the disparity still seems great. The health of the control group is particularly striking in view of the fact that it is drawn largely from the disadvantaged classes and that a history of broken homes was found in one-third of the cases.

Conclusions

1. A preliminary report of the first 150 interviewed subjects in a long-term (30-year) follow-up study has been presented. This report emphasizes the adult psychiatric diagnoses and their relation to childhood problems.

2. Patients referred to a child guidance clinic 30 years ago were found to have a high rate of psychiatric disease as adults as compared with a matched group of normal controls. They differed little from the normal controls in their rate of neurotic reactions but presented many cases of sociopathic personalities, psychotic reactions, and alcoholism.

3. The patients who contributed primarily to the diagnosis of sociopathic personality were those who had been juvenile delinquents as children. Many of those who were psychotic as adults had a history of anti-social behavior in childhood without court hearings. Patients who were psychiatrically well as adults came mainly from the group with neurotic problems as children. The relations between the specific presenting problem and the adult psychiatric disease show that the well group was characterized by problems such as fighting, sex problems, tantrums, and the classic neurotic traits of childhood.

4. While children with neurotic problems came from families of better socio-economic background than children with anti-social problems and delinquency, class background was not found to account for the greater proportion of psychiatrically well as adults among the subjects who had had neurotic problems in childhood.

5. While patients had a higher rate of broken homes than controls, broken homes were not found to be related to the continuance of psychiatric problems into adult life.

6. Although the rate of psychiatric disease is very high in the patient group, very few of them have sought any psychiatric help.

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COMMUNITY MENTAL HEALTH RESEARCH: FINDINGS AFTER THREE YEARS [1, 2]

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The research project to evaluate the mental health program of the St. Louis County Health Department has finished its third year. This paper summarizes the work to date and points out future directions. The basic problem was to evaluate three levels of mental health services set up as preventive and early treatment measures, operating in and through the schools. The three levels are defined as follows(1):

1. A dual program: the simultaneous operation of an educational program(2) consisting of discussion groups of parents in the school setting, led by lay people especially trained in leadership techniques; and also a school-centered mental health service (3, 4, 5, 6) supplied by professional workers.
2. The lay education program alone; and
3. A control, schools in which *no* organized mental health program is operating.

The problem of setting up a research design that would enable us to study the effects of the two programs together and separately, and at the same time eliminate extraneous influences by suitable controls was a difficult one, reported previously(1). After much consultation an incomplete blocks design(7) was set up, in which 15 schools were to participate. The population of third-grade children and mothers was to be studied before, during, and after the operation of one of the three levels of the program defined above. Thus three annual waves of data were to be collected, and we are now mid-way in collecting the third. No changes brought about by the program have yet been measured. This paper reports work through the pilot study, and some of the findings in the analysis of the first year's data collection, especially in the area of maternal attitudes, on the total sample of third-grade mothers and children in the 15 experimental schools.

Having established the basic hypothesis that attitudes in parents are related to behavior disturbances in children, and that our mental health program can change these attitudes, and having selected the research design, we next studied the complicated subject of what data to collect, and how best to collect it.

Workable sub-hypotheses about program goals, the pertinent relationships between parents, children, school and community were formed. This was done by boiling down interviews and conferences with all the professionals involved, about what they were trying to do, and why. These workers were from different disciplines, psychiatry, psychology, and social work, and there was a wide variation in their general orientations toward the root causes of human behavior; but still there was considerable unanimity of opinion. All agreed on the basic assumption that attitudes held by mothers affect for better or worse the behavior of their children. Two of us who had worked together 10 years in community mental health activities felt that when mothers of children with behavior problems were able to accept the fact that they were involved among the causes of the children's problems, and thus could modify their behavior and improve the children's situation, the battle was over(3, 4). Rejection of the mother-role was another attitude one of us had seen frequently in clinical practice. These are mothers who hate to grow up, who feel that the children have all the fun and that adult life is pure drudgery. These mothers are competitive with their children, frequently for grandmother's attention(4). The problem was to identify, define and assess these and other attitudes, and then to upgrade them

[1] Read at the 113th annual meeting of The American Psychiatric Association, Chicago, Ill., May 13-17, 1957.

[2] This is a report on part of a Mental Health Research Program of the St. Louis County Health Department and Washington Univ., supported by research grant M-592 from the National Institute of Mental Health of the National Institutes of Health, United States Public Health Service.

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by using the mental health operations before described. To do this one must capture the significant maternal attitudes, and also evaluate the emotional state of the child, before and after the operation of the program.

In order to place the child on a level representing his emotional adjustment a number of tools were devised to study him. These are:

1. An interview with the mother.
2. Adjustment ratings by the teacher, by the professional worker, and by both.
3. Group psychological testing of the children, including *Wishes,* an instrument designed by Rogers(8) and modified for the present study. This is a measure of reality contact. *Secret Stories*(9) was designed by one of us for assessing children's reactions to parents and peers. This is a story completion test, which is a limited projective technique.
4. Sociometrics, classroom and family.
5. Observation of children's interaction in the classroom during a special classroom activity, the bean game.
6. School records.

The techniques were applied and validated by a pilot study of 126 families of third-grade children in the spring of 1954. During the pilot study it was found that the teachers' opinions as to the emotional state of the children agreed within 86% with the opinion of the professional school mental health worker. The teacher thus proves to be a reliable screening tool. By these combined observations the children were assigned to groups representing their levels of adjustment. The levels used and validated were: 1a. unusually well adjusted, 1b. averagely or normally adjusted, 2. sub-clinically disturbed, 3. clinically disturbed, or requiring referral to the child guidance clinic. These criterion groups were derived from Ullman(10) and used in all subsequent analyses. Groups 1a and 1b were combined as "normals" in some of the analyses.

The interviews with the mothers were conducted by trained interviewers who reported(a) a summary of the interviewer's impression of variables influencing the interview situation (mother's attitude toward the survey, interruptions, unusual factors in the life situation of the mother, and characteristics of the dwelling and neighborhood); (b) the family background and structure, *e.g.,* occupation, income, education, religious and other group participation; (c) a symptom inventory of the child's behavior; (d) the mother's perception of her role in child care; (e) the mother's attitudes toward child care as indicated in her responses to the attitude scale; and (f) the amount and kind of the mother's contact with mental health resources in the community.

Findings from the pilot study were of several sorts. The symptom inventory(11) which was part of the interview and reported the mother's observations of her child's symptoms was found to be a reliable screening device, differentiating successfully the 4 criterion groups. The symptoms specifically asked about, with frequency, duration and severity noted, follow:

THE TWENTY AREAS OF DIFFICULTY SCREENED BY A SYMPTOM INVENTORY

1. Eating	10. Sex
2. Sleeping	11. Daydreaming
3. Digestion	12. Temper tantrums
4. Getting along with children	13. Crying
	14. Lying
5. Getting along with grown-ups	15. Stealing
	16. Destructiveness
6. Unusual fears	17. Rejection of school
7. Nervousness	*18. Wetting
8. Thumb sucking	*19. Speech
9. Overactivity	†20. Motion sickness

Sample Inventory Question

"Does Johnny have any trouble getting along with other children?"

A. "How often does he have this trouble?"
B. "How long has he had this trouble?"
C. "How serious is it?"

* Added after pilot study; included in all later work.
† Added for special study in third year only.

The classroom sociometric data also provided a screening device since the better adjusted children were chosen more frequently than the less well adjusted(9). The "Secret Stories" showing the child's relationship to parents and friends, also differentiated the criterion groups(9). The rank ordering of family and friends did not confirm work previously reported by Rogers(8) but it was found that there was a modal distribution of preferences in the child's concept of his family(12). Also the idea that the grandmother in the home is associated with dis-

turbance, as reported by us(4) previously, was not confirmed. However, grandmothers in the pilot study were a very small sample, 14 cases, and this hypothesis will be retested in the total sample.

The problem of assessing the relevant maternal attitudes is a very sticky one. It is essential first to be able to identify the significant attitudes of mothers which influence the behavior of their children. A valuable piece of work done earlier on this subject is by Edward J. Shoben, Jr.(13) at the University of Southern California. He constructed an attitude survey of the questionnaire type, containing originally 148 items bearing on the points of view of adults toward children. This instrument was administered to 100 mothers. Fifty were mothers of children who had been identified by the police as delinquent, or whose parents considered them as needing help for behavior or emotional problems. The other 50 was a control group of mothers, matched pretty well as to socio-economic level as measured by income and occupation of the husbands. The control group, however, averaged over 12th grade in school, and was significantly better educated than the problem group which averaged about 10½ grades. Both groups were better educated on the average than the parents in our sample.

When the original 148 items were administered to those 100 mothers it was found that 85 items discriminated between the mothers of problem children and the control group. Shoben submitted these 85 items next to 40 more mothers, again of 20 problem children and 20 controls. These were not matched, but selected only on the basis of problems (as previously defined) in their children. Although shrinkage occurred the amount was not excessive, and the items again clearly discriminated the mothers of problem children from the normal controls. The questionnaire was constructed on a 4-point scale and Dr. Shoben comments that *in some cases* the problem subjects favored extremes of response categories while the controls *consistently* chose the middle ones.

In our pilot study 80 items derived from Shoben's 85, but not identical with them, were submitted to 126 mothers. This sample was composed of 90 mothers of third-grade children, and 36 mothers of children who were in the child guidance clinic. Slight changes were made in the wording of the items because the mothers in our sample were of a lower educational and socio-economic level than those in the Shoben study and we felt the meaning of some of the Shoben items would not be easy for them to understand. The children of these 126 mothers were sorted out into 3 levels or categories of disturbance. These 3 criterion groups were established as follows: for 62 mothers by the fact that their children had been under observation in the schoolroom for one year and showed no evidence of disturbance; 39 of the mothers had children who showed evidence of disturbance as determined by the school mental health workers in consultation with their teachers, but were not sufficiently disturbed to have been referred to the child guidance clinic, and 25 of the families had been referred to the child guidance clinic. The fact of clinical degree of disturbance in 23 of the 25 children was established by complete clinical study and diagnostic conference.

Thirteen of the 80 items in our pilot study showed on analysis a significant relationship to emotional disturbance in these children. Three of these items which discriminated the criterion groups related to whether or not the mother considered herself involved in the child's problem. Four were items indicating the mother's attitude toward discipline and conformity. The last group of discriminating items related to comfort and self confidence or discomfort in the mother-child roles: three related to how to handle sexual play or ideas, and one stated that it was difficult to know how to deal with a child's unrealistic fears. One was a school or social adjustment item. Last was an item of parental rejection.

After much discussion among ourselves and our University of Michigan consultants a group of 17 items was compiled which included the above 13, and three more of the Shoben items that looked promising. Also included was a "maturity" item mentioned before, derived by one of us from clinical practice, *i.e.*, "Children have more fun than grownups do." This 17-item attitude schedule was included in the questionnaires ad-

ministered to the total sample of 823 third-grade mothers in the first year's data collection, from the schools composing the research design. The children in this study were assigned to criterion groups, as defined above, primarily by teachers' opinions, but also by consultation between the teachers and mental health workers. When the answers to these 17 items were analyzed in relation to the criterion groups (*i.e.*, the degree of emotional disturbance), no significant correlations were obtained. However when the items were analyzed in relation to social class, as derived from Warner's(14, 9) classification, a clear-cut relationship between answers and social class was obtained. Eight of the 17 items were found to be significant at the .05 level of probability or better in chi-square tests. A list of the 17 items and their chi-squares, as analyzed by social class, follows:

17-Items—Social Class Differences in Maternal Attitudes

Attitude item	Chi-square	P	Discrimination of social class
1. Problems in children come out of troubles inside the family.	5.17	.70	not significant
2. Children have more fun than grown-ups do.....	60.98	.001	significant
3. It is hard to know when to make a rule and stick by it..	20.33	.01	significant
4. Jealousy is just a sign of selfishness in children.....	24.23	.001	significant
5. School is a hard place for children to get along in.....	11.89	.10	not significant
6. Parents who are strict with their children know ahead of time what their children will do and what they won't do..	8.64	.20	not significant
7. It is hard to know what healthy sex ideas are.....	35.89	.001	significant
8. When neighbors or teachers complain about the behavior of a child, this shows that the parents haven't done a good job	1.59	.98	not significant
9. It is hard to know what to do when a child is afraid of something that won't hurt him.....	6.48	.50	not significant
10. It is hard to know what healthy sex play is.....	13.92	.05	significant
11. Children don't try to understand their parents.....	3.88	.70	not significant
12. No matter what parents try to do, there are children who don't change at all in the way they behave.....	29.83	.001	significant
13. The most important thing children should learn is obedience to their parents	46.98	.001	significant
14. It is hard to know when to let boys and girls play together where they can't be seen.....	22.77	.001	significant
15. When they can't have their own way, children try to get around the parents some other way.....	6.07	.50	not significant
16. It is hard to know when I am forcing my child to be too different from other children.....	7.45	.30	not significant
17. Children should not bother their parents with petty problems	12.49	.10	not significant

Thus it appears that the attitudes of mothers as reflected in these 8 significant items correlates with the social class of the families, and not with the degree of disturbance in the child. Our failure to confirm Shoben's work may have resulted in part from the class and educational levels of our samples, which were definitely lower than that of either his problem or control group. However, we do find, confirming Shoben, that the mother who held the most extreme opinions in the direction of the commonly held opinion of the class to which she belongs is more likely to have a disturbed child.

About three times as many boys as girls are referred to the mental health worker. This coincides with many other observations. We assume that one reason for this is that because the teachers are middle class women they understand middle class children better, and girls better than boys. Beyond the usually mentioned reasons why boys are more frequently referred for help than girls it occurs to us that the female teachers may tolerate deviations from the norm in girls better than in boys.

In all cases where the items were significant the higher the social class of the mother the more likely she was to disagree with the statement. We see the distribution of parental attitudes generally along straight lines. The upper class mothers accept responsibility for child behavior, believe that grown-ups have more fun than children, and that

standards of discipline and behavior are comparatively easy to establish. All 3 sex items were significant, with the upper class women feeling that the sexual problems of their children are relatively easy to understand and deal with. As we go down the social ladder we see the mothers increasing in turmoil and uncertainty about discipline and sex, and we see them feeling that the children have all the fun.

Our failure to confirm our own earlier work(3, 4, 5) in which we believed that the mother's acceptance of responsibility for her child's behavior correlated with good or improved adjustment appears to have resulted from the difficulty of separating social class factors from attitudinal factors. For instance, we now have studies on several samples showing that, with our screening methods, we find proportionately more disturbed children in the lower and upper classes than in middle classes. Prior to this study our research had not included the upper classes, and we found more disturbance in the lower classes than in the middle. At the same time we also found proportionately more disturbance in children whose mothers denied responsibility for the behavior of their children. We can now say that acceptance of responsibility correlates with social class, like the other significant attitudes, on a straight line. Greatest acceptance is found in the upper classes, next greatest in the middle classes, and least in the lower classes. Reviewing our previous work in light of this finding we find that the lower class groups are characterized by both a high incidence of disturbance and a denial of maternal responsibility for child behavior. The large sample in our current work permits us to examine the relationship of social class and this attitude when disturbance is held constant, and our social class findings are confirmed. We may also examine the relationship between attitude and disturbance when social class is held constant. In this case our previous findings are not confirmed, and it appears that a mother's acceptance of responsibility for the behavior of her children is more related to social class than to disturbance.

In order to investigate further the relation of maternal attitudes to children's behavior, we included a group of open-ended questions in the questionnaire administered to the total sample of 823 mothers. The questions asked the mothers what pleases them or displeases them about their children and the parent role. In relation to the symptom check list mentioned above the mother is asked what she thinks caused each of the symptoms (up to the first three mentioned), how she thinks it will come out, and what she plans to do, or thinks she can do, to improve matters. The answers to these questions have been coded and punched on cards after much discussion. The points of coding are whether the mother believes that the child's behavior is caused, or has no discernible cause, whether the cause is single or multiple, whether the mother is involved in any way, and whether she believes she is able to influence or change the symptomatic behavior. A chart illustrating this method of conceptualization and coding follows:

CHART FOR CODING ATTITUDES OF MOTHERS TOWARD THEIR CHILDREN'S SYMPTOMS

		Cause of symptom				
		Natural		Supernatural		
		Multiple	Single	Multiple	Single	No cause (It just happens)
Mother feels involved and/or responsible	She *feels able* to change things	A	—	—	—	B
	She *feels unable* to change things	—	—	—	—	
Mother does not feel involved and/or responsible	She *feels able* to change things	—	—	—	—	
	She *feels unable* to change things	—	—	—	C	

The mother whose reported attitudes place her in box A believes that her child's behavior has many natural causes, and that she is involved and able to change things for the better. Our hypothesis is that this mother will have the best adjusted child. Conversely the mother in box B, who sees no cause for her child's behavior, or box C, who believes the behavior has no natural cause, and that she is not involved, and thus cannot help it, will have the most disturbed children.

Discussion

The many problems in doing research in mental health evaluation have to be met individually, and with special reference to the individual characteristics of the community and its people. Early in the school mental health work done by two of us it became apparent that certain populations could use the school mental health service readily, and that various degrees of difficulty were encountered in various areas in gaining acceptance. We now see that the schools in which we met with such marked success serve populations of the lower middle, and upper lower classes. We experienced hopeless difficulty, and ultimate failure, after 2 years of effort in schools serving a deprived minority group, negro(15). The work reported here shows clearly that normal parental attitudes vary with social class, and thus implies the need to tailor the mental health service even more explicitly to the population to be served than we had heretofore thought necessary.

At the opposite end of the scale in our lay education program we had found that great difficulty was experienced by discussion leaders who went out with mental health films to the private schools serving the upper-middle and upper classes. The lay leaders who went out readily to most assignments dreaded going to private schools. We found when we could send a leader who herself came from a class well up the scale to a private school, we had a much better chance of success; but even then, less than in the middle class public schools.

Our work has shown that quite adequate screening tools are available to select the school children who would be helped by special consideration in program planning and in treatment. These are inexpensive methods, either because the material is at hand, as in the case of teacher's opinions about children's adjustment, and school achievement records, or the methods can be applied in groups as in the case of the group testing, the sociometrics, and the symptom inventory.

We are at present well along in the third year of data collection, and will finish next year, but data treatment lags far behind collection. Our next task is to analyze further the open-ended attitude items, and to continue exploring significant attitude findings within each social class.

Summary

Three years of work in a research project to evaluate a community mental health program have been reviewed. Problems in hypothesis formation, research design and instrument validation have been discussed. Positive correlations have been found between the degree of emotional disturbance in school children and teacher's reportings, school achievement, a group test, sociometric data and mother's symptom reporting. Positive correlations have been found between attitudes of mothers toward children and the social class of the family. We find a greater number of referrals of disturbed children in the upper class and extreme lower class, fewer in the middle and upper lower classes. Boys are referred more frequently than girls. More boys are in the clinically disturbed criterion group, and more girls in the normal groups. We also report an hypothesis about the relationship between maternal attitudes and children's symptoms as shown by open-ended questions, and a concept for coding and analyzing the responses.

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DISCUSSION

ROBERT W. LAIDLAW, M. D. (New York, N. Y.).—In attempting to evaluate the data presented by Dr. Gildea and her associates, it is important to remember that this is essentially an interim or progress report. An earlier publication describes in more detail the setting up of the research design and, in the future, the authors promise a further report in which factors still under study will be discussed and analyzed.

This research in community mental health has a very realistic and practical objective, namely, to evaluate the effectiveness of the two least expensive types of service for school children—the school centered service and the educational program for parents. In this approach it attempts to discover and treat behavior disorders in children at a more incipient level and thus, in part at least, avoid later referral to a more expensive type of psychiatric resource, namely, the child guidance clinic.

The basic hypothesis of this study is one on which, I believe, all schools of psychiatry would agree—that attitudes held by the mothers affect, for better or for worse, the behavior of their children. The problem here is to bring to the mothers of children with behavior disorders, through what is primarily a group therapy approach, a realization and an acceptance of the fact that they are involved among the causes of their children's difficulties. On such a realization is predicated a modification of their maternal attitudes and a consequent bettering of their children's behavior.

The problem from a research point of view is how to discover the best instruments to *measure* the effectiveness of a frontal approach to maternal attitudes. The study indicates clearly the difficulties encountered in gathering together a list of significant maternal attitudes. It was only after trial applications of 17 items on Shoben's earlier work that relatively few items of significant importance were retained.

In this study the mothers' answers to these 17 items showed no significant correlation with the degree of emotional disturbance in the children. Since many of the children fell into an underprivileged category, it may be that the scales were tipped in an adverse direction by unwholesome influences outside the home, even though their mothers may have had positive and responsible attitudes toward them.

The conclusion which Dr. Gildea and her coworkers draw on the basis of their finding that normal parental attitudes vary with social class is an important one, namely, that it is most necessary to adapt the mental health service to the type of population to be served even more closely than had heretofore been thought necessary.

It is to be anticipated that when Dr. Gildea and associates have completed this project they will have delineated a practical, inexpensive type of mental health program for the schools together with sharpened and validated instruments for measuring its effectiveness. This should have wide applicability and prove to be a valuable contribution to preventive psychiatry.

PATTERNS OF PATIENT MOVEMENT IN GENERAL HOSPITAL PSYCHIATRIC WARDS[1]

LUCY D. OZARIN, M.D.[2]

This paper proposes to review pertinent literature concerning the use of hospital space for psychiatric patients, to report on the observations of patient movement in 7 psychiatric wards in 5 general hospitals and to derive some conclusions applying to physical facilities for psychiatric patients in general hospitals.[3]

Review of Pertinent Literature.—Space is a dimension surrounding all things. All animate beings inhabit and make use of space either by instinctive patterns or by learned or planned behavior. Space is an important aspect of the economy and pattern of life.

Hediger, Director of the zoo in Zurich[4] (1), has described the behavior of animals both in their natural habitat and in zoos. From his observations, he draws many parallels in the space habits and needs of man and other animals, birds and reptiles.

Hediger points out that space has not only the characteristics of quantity, but also characteristics of quality. Animals demark the extent of the space they take for their own, often by leaving their scents on the borders. Some animals and birds may die if their living space becomes insufficient. Naturally the most important part of an animal's territory is its nest or home. Hediger cites numerous examples to illustrate that behavior of mammals, birds and reptiles is often determined by the quality and quantity of space in which they live, their environment.

Man, also, demarks his space by fences or numbers. "A man's home is his castle," and since ancient times the law has permitted a man to defend his home against invaders.

Mr. Robert Pace(2), an anthropologist at the Veterans Administration Hospital, Downey, Illinois, describes an illustrative incident occurring in a mental hospital. He entered a dayroom in a chronic psychiatric ward to observe the patients, choosing a chair in a corner of the room. Shortly after he noticed a patient pacing back and forth near him. Later when all the patients went to lunch, Mr. Pace walked out with them and in the corridor was struck by the restless patient. Seeking an explanation, Mr. Pace learned from an aide that the chair he had taken was the one the angry patient usually occupied.

Dr. Edward Stainbrook(3) has described how the structure of a building determines the behavior of the people and their task performance or living interaction within the building. He cites as examples the one room Eskimo igloo and the Moslem upper class dwelling. In the latter case, the structure is one to limit communication or exchange between the women's quarters and the rest of the house. Stainbrook quotes Robert Merton's phrase, the "self fulfilling prophecy" as applicable to mental hospital architecture.

> . . . if the very physical space of the hospital anticipates disturbed behavior in the people who are going to inhabit it, it will inevitably tend to produce stereotypic expectancies that this kind of behavior is going to happen, both on the part of the patient, who has to learn how to be a patient in this environment, and on the part of the personnel, who also have expectancies about how patients are going to behave in a disturbed ward . . . it is the physical space which determines a good deal of the possibilities of interaction in the life space.

While participant interaction is important in a psychiatric setting, Stainbrook states that there is a necessity for everyone and particularly for the person disturbed in his living, to have considerable opportunity for privacy or self-communication. How to pro-

[1] Read at the 113th annual meeting of The American Psychiatric Association, Chicago, Ill., May 13-17, 1957.

[2] From the Architectural Study Project of The American Psychiatric Association. This Project is supported by grants from the Division of Hospital and Medical Facilities, U. S. Public Health Service and the National Institute of Mental Health. Address: 4607 Jefferson St., Kansas City, Mo.

[3] The conclusions and suggestions in this paper reflect the personal views of the author and do not represent official statements of The American Psychiatric Association.

[4] I am indebted to Dr. Humphry Osmond of Saskatchewan for telling me of Hediger's fascinating book on the *Behavior of Animals in Zoos and Circuses.*

vide privacy is both an administrative and an architectural problem.

Recently Dr. D. Ewen Cameron(4) wrote:

> Settings we now realize are an integral part of the actions that take place within them. They are fields of social force into which we put our various agents. . . . Agents and field force are not separable, each modifies the effectiveness of the whole; both together determine the result.

Social force implies communication, for without communication social force cannot exist. The role of social forces and communication in the mental hospital have been eloquently described by Stanton and Schwartz(5).

These are not new concepts although we may use modern terms for their expression today. Almost a hundred years ago, Thomas Kirkbride(6) considered the details of the physical structure of the mental hospital. He reminded his readers that the size of a mental hospital was set at 250 beds by the American Association of Hospital Superintendents so that the superintendent could visit all areas daily or every other day. This is recognition of the importance of communication. Kirkbride recommended that a ward be limited to an average of 15 patients. He advocated single rooms for patients and none so large that two beds could be squeezed in. If dormitories were used, they should be for 4 or 6 beds. Kirkbride wrote:

> The great majority of patients would strenuously object to such an arrangement as the associated dormitory just as much in a hospital as they would in a hotel or boarding house and most of them regard with especial feeling the privilege of enjoying at times the privacy and quiet of their own rooms and this feeling should, if possible, be gratified.

Dr. Humphry Osmond of Saskatchewan (7) has sought to formulate the basic principles for psychiatric ward design by making use of present knowledge and theories of psychopathology. Since the schizophrenic often suffers from perceptual distortions, it is desirable that the space should not be too large and it should not be ambiguous in design. Mirrors help a confused patient to keep his identity more clearly in mind. The memory difficulties of old people may be lessened by painting different areas in different colors. Patients should be permitted to retreat into physical privacy when they feel threatened rather than be forced into psychological withdrawal from reality.

Osmond(8) is particularly interested in the size of groups, arriving at the conclusion that "groups of 4 to 8 people are especially liable to form beneficial, supportive and constructive relationships." He, therefore, seeks to design his ward around sub-units of this size.

Mention must also be made of the book *From Custodial to Therapeutic Care in Mental Hospitals*(9) which describes in great detail the effects of physical surroundings on patients and staff.

The need for patient and staff space adequate in quality and quantity is expressed by many writers. Moll(10) in a recent article emphasizes this need and says, "Give the patient space, I repeat, give the patient space."

This brief review of the literature furnishes a background for the study described here.

The Use of Ward Space by Psychiatric Patients.—Our observational study of 7 psychiatric wards in 5 general hospitals was undertaken to seek clues as to the important variables in programming and planning physical facilities. The hospitals selected with one exception had participated in an earlier case record study carried out by the Architectural Study Project. The 5 hospitals had active treatment programs and a high patient turnover rate on the psychiatric service.

Space on a psychiatric ward may be divided into patient areas (dayroom, bedroom, corridor, toilet, hydrotherapy room, bathing and dressing areas, clothing room, occupational or recreational therapy areas) and staff areas (nurses' office, kitchen, treatment room, utility room, supply, storage and linen closets, doctor's office, etc.).

During one part of our study we recorded the movement of patients about the ward and the nature of their activities. Movements were recorded during 16 hours, divided into two 8-hour periods, within 2 or 3 days' time. Starting before the patients arose in the morning and continuing until they were all in bed at night, we checked every 15 minutes where each patient was and what he was doing. Patients were rarely found in staff

areas except at Hospital G-3, an open service where all doors were unlocked.

Patient activities followed a similar pattern at all 5 hospitals, with variations in extent and degree depending on treatment programs and administrative practices. They arose between 7:00 and 8:00, breakfasted, dressed, made beds, saw their psychiatrists, had shock therapy, went to occupational therapy either on or off the ward, or sat about the dayroom or bedrooms. After lunch there was a rest hour, or occupational or recreational therapy, visiting hours, or a period of sitting around the ward idly or in varying activities with other patients or ward personnel. After the evening meal, there might be either organized recreation, visiting hours or a period of sitting around again until bed time between 9:00 and 10:00 p.m. Depending on the individual hospital's practice, bathing was carried out in the morning or night.

Security needs.—Each patient's psychiatrist was asked to judge the nature and extent of the security required for that patient. In the judgements of their doctors, more than 80 of the 160 patients we observed required no security precautions. However, 50 of these 80 were housed on locked wards since no other type of psychiatric facility was available.

Dayrooms.—We found that the dayrooms at any time were not often more than half full except when they were also used for dining purposes. The largest number of patients tended to occupy the dayroom immediately after the evening meal. This is not unlike the usual evening scene in any home. It suggests that the evening is a good time for social interaction and that this should be considered in planning the patient's day.

Our findings suggest that the total day area space should not be lumped into one large room as has been the usual arrangement in the past to facilitate the supervision of patients. We could find no evidence that such planning is to the patient's advantage. We found that patients preferred to be alone or in small groups. Those wards which provided several day areas made semi-privacy and small group gatherings possible and permitted a greater diversification of activities. If one room is needed for assembling all the patients, the dining area is a logical place since, unless it is so small that patients must eat in two shifts, this space will accommodate all the patients.

Dining Rooms.—On the 3 wards we studied which had dining areas, the area was open to the ward and patients used these dining areas a great deal outside of meal times for writing letters, playing cards or just visiting with each other. It seems that the physical proximity that comes from sitting around a small table favors social interaction.

Hospital G-3, the open ward, allowed patients in the kitchen where a coffee pot was always on the stove. The kitchen was an active social center for small groups of patients and staff were frequently included. The other 4 hospitals did not permit patients in the kitchens. At one hospital an evening popcorn party was held and the nurse secluded herself in the kitchen for 45 minutes preparing for the party while the patients watched television or played cards.

The wards which had dining areas offered many advantages. It was possible to set

TABLE 1

SIZES OF HOSPITALS AND PSYCHIATRIC WARDS, PATIENT OCCUPANCY AND DIAGNOSES

Hospital	Medical school affiliation	Total beds	No. of psychiatric wards	Psychiatric beds	Patient occupancy of ward	Diagnoses *				
						N	D	S	Or	Ot †
G-1	Yes	410	1	26	25	1	15	8	4	2
G-2	Yes	736	2 (P-33, M-24)	57	32, 25	1	15	7	7	4
						1	6	11	3	4
G-3	No	160	1	20	17	3	6	2	1	5
G-4	No	394	1	22	25	0	18	4	1	1
G-7	Yes	483	2 (A-18 ‡, B-17)	35	13 §, 9	1	6	1	6	1
						4	3	5	1	0

* Patient turnover with new admissions may make total for a ward greater than occupancy.
† N—Neuroses; D—Depression; S—Schizophrenia; Or—Organic; Ot—Other.
‡ Men and women on separate wards.
§ Admissions limited during period of resident turnover.

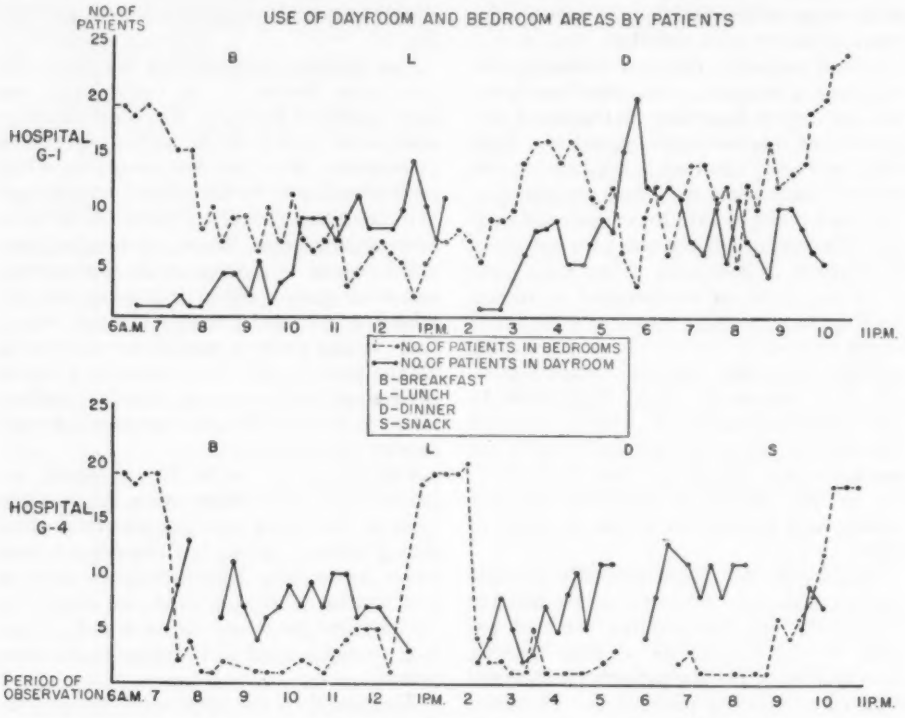

FIG. 2

tables in advance; every patient could sit at a table instead of balancing a tray on his lap or eating in solitude in his bedroom; patients could eat in small, comfortable groups that favored conversation. At the end of the meal, they could chat over their coffee and then leave the postprandial mess in the dining area.

Bedrooms.—All the wards we studied had single and double rooms. One ward had 3-bed rooms (originally built for 2 beds) and some wards had 4 beds. There were no larger dormitories. In all wards, the bedrooms were always kept open and the patients had access to them.

The bedroom types ranged from bare institutional atmosphere at G-2M to hotel-type rooms at G-2P and G-3 with closets, private toilets, soft lights and comfortable furniture. As a subjective observation, it seemed to the writer that staff attitudes and deference toward patients, the socioeconomic status of the patients and the luxury features of the wards were inter-related. At G-2M, the barest of the wards we studied, the atmosphere was also the most rigid and typically institutional. This suggests the self-fulfilling prophecy mentioned by Stainbrook.

A few patients were in the bedrooms at all times although usually they were not the same individuals. The bedroom was the only place where the patient could have any privacy. Often, patients who shared double rooms tended to form a social relationship going to activities and meals together or visiting in their bedroom. We saw several instances also where a patient was quite distressed and disturbed by a roommate. The criteria for placing patients in single rooms were more clear cut than for other sized bedrooms. The patients assigned single rooms were those with physical illness who needed considerable nursing care; the noisy, combative, or untidy patients; those who snored loudly at night; and those for whom privacy was prescribed as a therapeutic measure.

Whether a patient was housed in a 2, 3 or

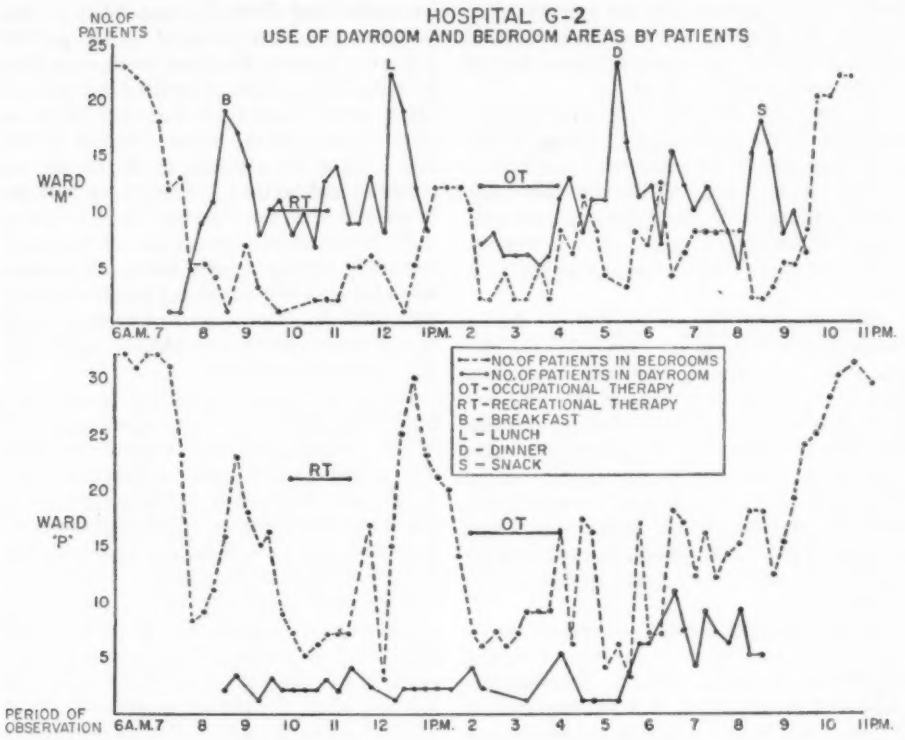

FIG. 3

4-bed room depended more on the availability of beds and the patient's finances. Some financially comfortable patients demanded single rooms. When the psychiatrists were asked directly what type of bedroom the patient required, the answer usually either reflected the doctor's preference for sleeping arrangements or he stated that it made no particular difference unless there was a special requirement as mentioned above.

Bathrooms, Toilets and Clothing Areas.—The more luxurious wards had some rooms with completely private baths. At Hospital G-2M there was one combined bath-toilet-locker room for each sex. The toilet stalls had no doors; bathtubs had no privacy. At G-4 the showers and toilets were in the same room but there were doors on the toilet stalls. At G-3, G-2P and G-1 toilet functions and bathing were carried out in individual rooms which gave privacy to the user. In the women's toilets and bathrooms, the writer gained the impression that middle aged and older women were very embarrassed and uncomfortable by being nude in front of others.

At G-1 patients were in night clothes in conformity with the practice throughout the hospital. They rarely left the ward. At the other hospitals, patients wore street clothes. Except at G-1 and G-2M, patients had ready access to their clothes. In all the hospitals they shaved themselves except for the infirm patients. Shaving was always supervised and razors were kept in a staff room. When patients had access to their clothes and toilet articles their appearance and grooming was better than when they had to ask personnel to get their things from locked areas.

Patients' Laundry Room.—Hospital G-4 had a small laundry room equipped with a laundry tub and a wooden clothes drying rack. The laundry was used extensively by both men and women to wash their hose or underwear and occasionally outer clothing. The women also found the tub with the pro-

jecting water spout useful for hair washing. At G-4, doing the laundry assumed a social aspect. At times the women patients ironed clothes for the men patients.

At the other hospitals, personal laundry was done in the bathrooms and hung to dry in various places as treatment rooms, hydrotherapy rooms, etc. Wherever there are ambulatory patients, facilities must be provided for personal laundry. For a woman, a laundry is as essential to grooming as a mirror.

Hydrotherapy Rooms.—Five of the 7 wards had a continuous flow tub. Of the 160 patients surveyed, only one, a neurotic, was treated in such a tub and this was for only an hour a day. Hydrotherapy at present does not appear to be a frequent treatment in general hospital psychiatric wards. We found the hydrotherapy rooms being used for storage or for hanging patients' personal laundry, and since they contained no shelves or cupboards, they tended to be cluttered.

Shock Therapy Rooms.—None of the 7 wards we observed had facilities designed specifically for shock therapy. Subcoma insulin was used at G-3 on 4 patients and at G-7 on one. It was administered in the patient's bedroom—either a single or double room.

ECT was used frequently with the exception of Hospital G-7 and often in makeshift space. For example, at Hospital G-1, the treatment was given in a windowless, hot cubbyhole. After the convulsive seizure, the patient was moved for recovery across the corridor to a hydrotherapy room crowded with beds, tubs, and various types of treatment equipment.

Hospital G-3 used a large room designed as a day area at the seclusion end of the ward. This room had 3 cubicles screened from each other and required no movement of the patient. This permitted ease of administration and supervision. Additional beds were brought into the area if needed.

From our observations, the practice of administering treatment in the same bed and ward area used for recovery minimized movement of the patient and required less personnel. This method seemed very efficient.

Visitors' Rooms.—None of the 7 wards we studied had visitors' rooms. Visitors were frequent and were received by the patients in the day areas or their bedrooms, except for Hospital G-4 which permitted no visitors. Often patients and their visitors would move from one area to the other. Sharing of visitors with other patients in dayrooms was common and seemed welcomed by both patients and visitors. Visiting hours produced a distinctly social atmosphere on the ward, especially during evening hours. No patient was observed who could not receive his visitors publicly. Two who had been in seclusion at times quieted considerably when they were with their visitors.

Need for separate visitors' rooms on a psychiatric ward was not supported by this study. In fact, visitors, like volunteer workers, added to the social atmosphere of a ward. It is likely that public acceptance of psychiatry will increase by permitting to relatives and friends first hand access with psychiatric patients and psychiatric settings.

Corridors.—One writer(7) suggests that corridors may be disturbing to patients with perceptual or memory disturbances. However, in our judgement, corridors provided valuable space for patient movement. At almost all times it was possible to see patients in the corridors either going from one room to another or just pacing the floors. The corridor was the largest continuous area on the ward in which one could move. The corridors were also a place of interest; patients could observe what was going on in the ward. A third function the corridors served was to permit more frequent patient-personnel interaction. Unless they entered patient areas, the patients had no contact with personnel unless they intercepted the staff in the hallways.

Occupational Therapy Clinic.—At Hospital G-2M, a group of patients not allowed to leave the ward had a 2-hour occupational therapy period daily in the dayroom and at Hospital G-1 a daily 2-hour occupational therapy session was held in a conference room.

In Hospital G-4 a large, well-equipped occupational therapy clinic was located on the ward and was open continuously to patients from 9:00 a.m. to 8:00 p.m., although the cupboards were locked and tools put away

when the therapist was off duty. Patients could enter or leave at will to carry out such handcrafts as painting, weaving, sewing and clay modelling. At the other hospitals, patients left the ward to go to an occupational therapy clinic elsewhere in the building. The availability of an occupational therapy clinic gave them additional space for interchange and activity. Space specifically planned and equipped for this purpose allowed a wide range of activities. The ward clinic as exemplified at G-4 seemed to offer certain advantages by its easy availability.

Recreation Areas.—Recreation areas in and around a general hospital are limited as a rule. For psychiatric patients, most of whom are ambulatory on admission and whose stay is usually at least several weeks, this poses some problems. However, except for G-1, the other 4 hospitals had arrangements to provide off-ward activities.

Hospital G-2 had a recreation staff and the use of a large gymnasium and game area as well as walking areas about the hospital grounds. Patients were encouraged to take advantage of the organized recreation program and for 3 to 4 hours a day more than half of them were off the wards. Hospital G-4 arranged daily rides and outings to public places of interest for small groups. These excursions lasted from one to two hours and were under the supervision of the occupational therapist and nursing staff.

Recreation areas for psychiatric patients seem essential. To keep physically able people indoors and confined to a small area is not healthy for anyone, to say nothing of people who are tense and anxious and for whom movement is a method of dispelling tension.

Seclusion Rooms.—Each service had at least two seclusion rooms. The rooms were used very little except at Hospital G-4, where the seclusion rooms were on a secondary corridor entirely separated from the rest of the ward. Table 4 indicates the kinds of patients for whom use was made of these rooms. No restraint was seen during our observations. Ataractic drugs were prompt and effective in quieting acute excitement or disturbed states.

TABLE 4

Hospital	Patient	Reason for seclusion
G-1	Female	Barbiturate coma
	Male	Hepatic coma
	Female	Manic excitement
G-2 "P"	Female	Senile agitation noisy
G-2 "M"	Female	Character disorder noisy, acting out
G-3	Female	Senile agitation
G-4	Female	Schiz excitement
	Female	Schiz catatonia
	Female	Senile
	Female	Depression electroshock confusion
	Male	Depression
G-7	Male	Uremia, toxic delirium
	Male	Impending delirium tremens

Critically Ill Patients on Psychiatric Wards.—There was a critically ill patient on each of 2 psychiatric wards studied. One was a moribund patient in hepatic coma; the other had a toxic delirium due to uremia. Both had been transferred from medical services. Both patients required a great deal of physical nursing care and medical attention. At Hospital G-1 the only night nurse on the ward was seen in the sick patient's room almost continuously from 6:00 a.m. until she went off duty at 8:00 a.m. Until this patient was returned to a medical ward, there was a tremendous amount of staff time devoted to his care on the psychiatric ward, and of course this left less time available for the other 24 patients on the ward.

Whether in a given hospital a physically ill patient with a psychiatric disturbance should be cared for on a medical or psychiatric ward may depend on the facilities and resources available. If the patient remains on the medical service, he may require placement in a special security type room or he may require the constant attendance of an aide or nurse. If he is on a psychiatric ward, it is necessary to provide staff and equipment to care for the additional load.

Children on Adult Psychiatric Services.—There was an immature 13-year-old boy on the psychiatric ward at Hospital G-1. At G-7A there was a 10-year-old, mentally defective, undersized child with severe speech difficulties. In both cases, the children required and demanded considerable staff time. If some one, either staff, parent or other patient were with them, they seemed content. Otherwise they were annoying to the other

patients. The 13-year old raced through the halls, played a bean bag game with great noise, and turned the radio up full force. On the evening we observed the ward, an aide was assigned to occupy him for 2 consecutive hours. The 10-year old seemed to want physical contact, to be close to others. He got in the nurses' way, he followed them around and sometimes inadvertently tripped them. Ambulant patients avoided him, but a wheelchair patient could not do so, and was often annoyed by the boy's rocking against his chair.

It seems clear that while an occasional admission of a child patient may not establish the need for a separate children's psychiatric ward, the staff should be prepared to give a child considerable time and attention, and plan a special activities program for him.

Summary

The amount and organization of space on a psychiatric ward is one element determining the possibilities of the treatment program. Systematic observations by the Architectural Study Project of the movement of patients in 7 psychiatric wards of 5 general hospitals are reported. These observations lead the writer to the following opinions.

More patients are kept on locked wards than need be locked up. Typically, there is need for more bed space on unlocked wards, less space on locked wards.

Ward arrangement which provides several small day areas is to be preferred to one large dayroom.

Ward dining rooms offer many advantages.

Bare wards seem to imply that patients have little value and foster an institutional atmosphere. More comfortable furnishings foster a ward atmosphere of more respect for the patient.

Since the use of hydrotherapy equipment is minimal at present, minimal facilities for hydrotherapy are adequate.

There is need for planning suitable space for the administration of shock treatments.

Special visitors' rooms do not seem necessary or desirable if suitable day areas are provided.

Recreation areas are essential and are not always adequate.

On the services studied, the one or two seclusion rooms provided are in general quite adequate.

There is need in planning for careful consideration of the most reasonable alternatives to caring for critically ill patients, and for children on adult psychiatric wards. If the decision is made that such patients will be cared for on adult psychiatric wards, it should be recognized that additional staff and at times, additional space and equipment will be required.

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Discussion

A. E. Moll, M.D. (Montreal, P. Q.)—The study of movement presents, in itself, certain difficulties, and a way of dealing with one difficulty is to arrest the movement, at least temporarily, and study the process at that given time. Dr. Ozarin has measured the amount of time spent by patients in the various hospital areas, corridors, wards, etc., and on the basis of her findings, has reached certain conclusions. I would like to point out, however, that the amount of time spent by any individual patient in a certain area, is not necessarily a valid gauge of the therapeutic value of that particular area. For instance, if we were to gauge the importance of the bathroom or of the E.C.T. room on the basis of the time spent by patients in such areas, we might easily reach the wrong conclusion.

The question of locked doors versus open doors or locked wards versus open wards is one that cannot be disposed of in only a few words. However, in the psychiatric department of the Montreal General Hospital we have no locked doors nor even security

screens on our windows, and yet the department is situated on the fourth floor. All windows can be opened and the patients are allowed complete freedom to circulate wherever they may wish, even though some of them are acutely disturbed, severely depressed or entertaining suicidal intent. Locked doors and barred windows cannot but provide the climate of a jail, where nurses, trained attendants, residents, etc., assume the attributes of jailers and the patients the demeanour of jailees. The extension of the body image is a silent and all-pervasive one. The elimination of locked doors and security windows, of course entails adequate and competent nursing staff. It also entails a certain amount of selectivity in the types of patients admitted, but curiously enough, it is usually the anxiety of the nursing and attending staff that dictates the type of patient that can be admitted, rather than the severity of the illness of the patient.

Re: the question of psychiatric wards versus 4-bed units or single rooms—it has been my fortune to have had experience in both settings. In my opinion both settings offer advantages and disadvantages. The acutely depressed patient wants to be left alone and, so to speak, to hibernate. Regressive phenomena are not necessarily always a bad thing. Regression at a certain stage of a disease process may actually be helpful rather than harmful. For such cases a single room may prove to be of therapeutic value, at least during a certain phase of the disease process. This brings up the question of the therapeutic value from socialization on the part of the patient. There has been a tendency of gauging the rate of improvement of patients according to the degree of socialization they have shown. I would like to suggest that at times, and in certain settings, the degree of socialization is not necessarily a valid gauge of the degree of improvement.

Conclusions

1. The physical structure of the psychiatric setting can and does play an important part as a therapeutic agent.

2. The goal in planning a psychiatric department should be that of offering patients and staff an environment where the patient *can* get well.

3. The environment is just as important for the staff as it is for the patients and one affects the other.

4. We haven't yet tapped the rich therapeutic resources available from an optimal environmental setting.

5. More research is needed in order to define what is an optimal environmental setting.

Dr. Ozarin's efforts in this direction are to be highly commended.

REHABILITATION OF THE MENTALLY ILL: IMPACT OF A PROJECT UPON HOSPITAL STRUCTURE [1]

MILTON GREENBLATT, M.D.,[2] DAVID LANDY, PH.D.,[3] ROBERT W. HYDE, M.D.,[4] AND J. SANBOURNE BOCKOVEN, M.D.[5]

Since November, 1955, the Massachusetts Mental Health Center (Boston Psychopathic Hospital) has been engaged in a research and demonstration project on "rehabilitation of the mentally ill." [6] Our commitment to this large effort tacitly admits that few benchmarks exist as guides in developing frontier areas in emotional and social reintegration, although a great deal of relevant experience has accumulated. The project was planned to study a variety of services now available to patients and to develop new services within a research framework.

We conceive of mentally ill patients as having considerable untapped potentialities for successful rehabilitation. Previous investigations at Massachusetts Mental Health Center (4) and other hospitals had convinced us that upgrading of patients could be achieved by social manipulation within the hospital setting. We felt that intensive efforts of the same general type directed to rehabilitation in the community would also be successful.

Although little was known systematically about after-care of patients, their resettlement in the community and prevention of relapses, it was nevertheless assumed that a wide range of methods might be valuable, and that an open "experimental" approach should be followed. The experiences in England and the continent, especially in Rees' Hospital at Warlingham Park, Jones' Clinic in Belmont, the pioneering explorations of Bierer with social therapeutic clubs and halfway houses, and family care programs of the Gheel type would all have to be considered. Day and night programs appeared to warrant intensive study. Programs of the member-employment type at Brockton V. A. Hospital embodied promising trends. The possibilities inherent in cultivating employer cooperation and aiding in their education about emotional illness could not be neglected. Family guidance and employment services appeared to have their place.

Our operational approach was inclined to view optimum rehabilitation as a combined effort of 3 agencies: 1. the *patients,* through their own efforts via instrumentalities like patient government and the ex-patient club; 2. the *hospital,* via the community clinic, an outpatient organization servicing ex-patients which tries to establish a vital link between patient and community, is geared to mobilize all available hospital services for the patient's benefit—psychotherapeutic (individual and group); sociotherapeutic (including day program and ongoing social activities); occupational and recreational; and physiotherapeutic (drugs, electric shock, etc.); 3. the *community,* committed to patient rehabilitation as early and comprehensively as possible.

Research centers around these questions:

1. What are the rehabilitation needs and potentials of discharged patients?

2. To what extent are these needs and potentials currently being met?

3. How can service be improved or altered, and what new services can be developed to meet these needs?

4. How can the techniques and procedures be identified and analyzed for optimal communication to others in the field?

We wish to discuss briefly some effects of the project on the functioning and organization of the hospital. Some of these resultants

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[6] For financial support of this project, we are indebted to the Office of Vocational Rehabilitation of the U. S. Department of Health, Education & Welfare.

might have been predicted from a general knowledge of research efforts of behavioral scientists in action programs and from specific knowledge of our hospital organization (3, 4). But certain phenomena belong in the class of what the sociologist Merton refers to as "serendipity" or unanticipated consequences of research (10). It will be convenient to discuss these tentative findings within a breakdown according to professional segmentation.

THE PSYCHIATRIST

An increased strain upon the psychiatrist is evident because of the necessity for keeping abreast of all of the patient's interests and gathering data from the many participants in his treatment program in order to develop an integrated picture of his life. Besides creating more "administrative" work, the project appears to have threatened the psychiatrist in several ways. It becomes necessary to temper his highly prized individual psychodynamic point of view with practical considerations relative to the patient's 24-hour day and transition to the community. Many psychiatrists would rather be concerned with the details of intimate transference and counter-transference problems than with spelling out the specific way in which this particular patient with his handicaps could fit optimally in society with the aid of social worker, training officer, placement officer and employer. It must be remembered that just as the psychiatrist often lacks a social orientation that might permit him to utilize the social environment of the hospital more successfully, so he lacks a community orientation in which the specific problems in adjustment to the patient's own culture are paramount.

The psychiatrist is also threatened when non-medical workers often show more therapeutic success than he is able to demonstrate; that is, occupational therapist, social worker, placement officer, and so on, sometimes get more therapeutically involved with the patient and appear to have had more of a salutary influence upon his clinical course than has the psychiatrist.

Even those resident doctors who have a social as well as a psychological orientation have been frustrated by lack of knowledge as to just how to make rehabilitation referrals, when, and to whom. In part this is due to faulty communication between doctor and special services, based on mutual threats not fully resolved. The nature of these threats is not altogether clear, but there is evidence not only of professional jealousies regarding the "aspect" of the patient that is handled by different services, but also fear that the doctor may try to control the patient's progress too much and perhaps vitiate the efforts of others, or that he will not control it enough and leave too much therapeutic responsibility in the hands of non-medical professionals. One result of this is that rehabilitation services have frequently been a "dumping ground" for (a) therapeutic failures, who are considered beyond rehabilitation, (b) patients whom the doctor is not seeing in therapy and in whom he has little interest, or (c) patients who seem obviously self-rehabilitatable and for whom special rehabilitation services are not only unnecessary but even contraindicated. However a perceptible trend in more recent months has been toward a better understanding on the part of many doctors as to the possibilities and limitations of the rehabilitation team and more appropriate referrals for rehabilitation services are being made.

THE SOCIAL WORKER

The social worker's situation is exceptional. She formerly had the chief responsibility for smoothing the transition of patients into the community, carrying on multiple functions of family therapist, job placement and social rehabilitation. With the advent of a rehabilitation project, it seemed that her domain was being split up with placement, job counseling and job training being given to other persons. With some justification the social worker felt that not only did she now have to allocate certain traditional functions to others, but that these others were not as well qualified by training or experience to dispense such services. Such frustrations engendered overt anger which was met in turn by the anger of others who felt that their potential contribution was not sufficiently appreciated.

To a large extent the problems of the social worker have been met by recognition of

the centrality of her role in rehabilitation and the importance of both her skill and clinical experience. In addition, special studies have been launched to investigate in detail her techniques and activities, in which a social worker trained in the hospital organization is the essential researcher. Since this was planned initially with the cooperation of the social service department there has already been a lessening of tensions between social work and other specialities and a growing capacity to work together.

THE NURSE

Like the social worker the nurse, though traditionally a key member of the hospital's rehabilitation team, felt her role was neglected by the project. In the past few months we have been studying the nurse's role intensively through a full-time participant observer, a graduate student in psychology who had had several months of experience as a psychiatric aide on the acute wards. As with the social work phase, this study was planned with the collaboration of the Department of Nursing and in particular the charge nurses of the male and female convalescent wards, who are most affected by the study. The very existence of the study has resulted in greater nurse participation in the project's work and a friendlier relationship between us.

There is considerable evidence that the nurse plays a major role in the general effort to mobilize the patient's resources, to provide a constant and stable figure in a dynamic and ever-changing hospital system, and to extend the daily warm care and firm hand that the socially deprived and dependent patient requires. Her daily concern with his needs helps provide a necessary span between the fantasy world of psychosis and the real world of the outside community.

Included in this research are the roles of the nurse's assistants: the psychiatric aide and the student nurse. The latter, incidentally, have received assignments not only on the ward, but in almost every aspect of broad hospital treatment, including occupational, industrial and recreational therapy. While the charge nurse is often burdened with administrative chores the aide and the student find the time to maintain nurturing relationships with patients and their efficacy has been reported by the patients themselves.

THE OCCUPATIONAL THERAPIST AND INDUSTRIAL THERAPIST

The occupational therapist has been stimulated to look into her own role in the total treatment process, especially the meaning of work and play to the individual patient. Especially provocative has been the recent suggestive paper by Azima and Wittkower(2). This survey of occupational therapy departments in several hospitals in the United States and Canada showed that the occupational therapists did not know very much about dynamic psychology, nor did the psychiatrists with whom they work have a clear understanding of the function of occupational therapists. The OT worker has in general been less threatened by our project than other services and a willing cooperator from its inception. After working through their own feelings on the subject, the OT department has voluntarily relinquished its dual functions of supervision of both occupational and industrial therapy. The latter area, formerly split as a part-time assignment among several occupational therapists, is now coordinated under a single industrial therapist.

All work tasks involving patients in the hospital now come under the overall coordination of the industrial therapist. Significant changes in the functioning of the hospital's industrial program are beginning to occur. Communication and coordination regarding the patient's work activities have been enhanced so that the flow of patients, and of information about them, between the ward and the many work areas is smoother. Individual scaled rating sheets for each patient's work—seen in the total treatment context—are being issued weekly by hospital employers, so that we shall soon have a more objective yardstick of how patients fare in each of the activity areas, their progress over a period of time, and an indication of which activities are most effectively utilized by given types of patients.

Employers have a reawakened interest in their own role as work therapists. Their problems and those of patients under their supervision are now discussed weekly in group session under the guidance of a case

worker and the industrial coordinator. As they gain increasing insight into their own functioning they learn to handle patient problems better and to be more cognizant of their own counter-transference feelings.

VOCATIONAL PLACEMENT OFFICER AND COUNSELOR

On a part-time basis the hospital has the services of an experienced vocational counselor on loan from the State Division of Vocational Rehabilitation. She operates as an integral member of the rehabilitation team, counseling patients in the area of vocational education and training. Where they seem prepared and intrinsically motivated—not moved by expedients arising out of sick behavior—and meet the legal requirements, she aids them in getting financial assistance toward additional vocational training or education. She has excellent relations with the case work and medical staff and while there was some initial problem between her and the placement counselor, due to differences in rehabilitation philosophy and method, at present both seem to be moving toward a *modus vivendi*.

The placement counselor came to the project with a background in academic psychology and experience as a vocational counselor in the tuberculosis field. At first his enthusiasm for helping patients at times clouded his judgment in assessing their capabilities and motivations, and particularly their readiness to move into the kind of independent roles that employment in the community usually demands. However, as a result of new experiences in the psychiatric setting he has grown considerably in his understanding of patients and now works with more sophisticated judgment toward his goal of vocational placement of patients. His differences with the social work staff loomed large in the early stages of the project, but gradually there has been less threat and more recognition of mutual contribution towards shared goals. He also functions as the industrial therapist; thus an intimate knowledge of the patient's occupational behavior in the hospital provides a substantial foundation for reintegration into the vocational system beyond the hospital's doors.

Recently the placement counselor completed a study(7) with the social scientist of the receptivity of community employers contacted during his placement efforts to hiring the emotionally handicapped. We were gratified to learn that nearly 80% were positively oriented toward employing current or former psychiatric patients. In another study of 40 male ex-patients followed up 1 to 2½ years after discharge, 75% were actually employed at the time of the follow-up. Nearly 25% of the total sample returned to work for employers who already knew of their illness and an additional 33% informed employers that they had been mental patients on the first job after discharge. Thus, 58% of employers on the first job after leaving the hospital knew of the psychiatric illness of these men but voluntarily cooperated in aiding their vocational resettlement(8).

THE PATIENT

Although the patient is the object of the numerous complex activities called rehabilitation, he is often the "forgotten man" in the process. As Seidenfeld(12, 13) and others have suggested, rehabilitation specialists usually deal with a "piece" of the patient's life. Except at a comprehensive staffing by all members of the rehabilitation team, the approximation to a configurational understanding of the patient is not always attempted or experienced by the individual rehabilitator. Everyone pays lip-service to the ideal of perceiving the "whole man," but professional and academic compartmentalization still hamstrings efforts toward optimal assessment of the total person.

Our ward observation studies have already indicated the vital and unsung role of patients in helping to rehabilitate each other. Albeit naïvely and unconsciously, perhaps the key role in the process is played by the patient himself.

Not only is *informal* patient-patient interaction a powerful force in the patient's life but he also has opportunity to play a considerable part in *formal* patient organizations. Apart from social and recreational groups he is a member of a ward group(4, Chap. 6) that meets weekly with the nurse

in charge to discuss conditions of ward living and ways and means to improve their environment and relationships. In addition, each ward is related to patient government (5) by elected representatives and all patients who are interested attend weekly patient government meetings presided over by their own officers. Patient government has been for many years an active, dynamic force for improving hospital life for all. It sends weekly reports to the assistant superintendent and occasional delegates to discuss a variety of problems related to their welfare. Everything possible is done to meet their suggestions, demands or expectations.

Day Hospital.—Some time prior to the inception of our project the hospital instituted a day-care program under the supervision of a social worker and the direction of a psychiatrist. Since November 1955 the day program has been incorporated into the rehabilitation program and has functioned with a large measure of success as a bridging device between hospital and community for patients who are ready to live at home but still depend on the relatively non-demanding hospital culture for routine activity. A day program recognizes two essential facts:

a. There are many convalescent patients who for primarily medical reasons, principally the increasingly pervasive use of tranquilizing drugs, need the supervision of a trained person, preferably a nurse.

b. Researches in social psychiatry and the experience of the hospital and its outpatient clinic indicate that many persons in the community too sick to adjust under normal conditions can make use of hospital facilities as part of a total treatment program without the necessity of hospitalization with its stigma and inherently disruptive influences on the family and social structure.

In January of this year the day program, now referred to as the day hospital, was reorganized under the supervision of a social worker and a nurse who has had experience in the social psychiatric techniques of Maxwell Jones'(6) unit in Belmont, England. The day hospital has its own ward and its own psychiatric chief of service. It is too soon yet to evaluate this program adequately, but the fact that it was undertaken with the active collaboration of the nursing service and in charge of a nurse recruited from the hospital staff has made for a minimum of intra-staff tensions. It is, like all new programs, deeply concerned with the problem of more clearly defining its functions, its limits, and overall objectives, and of specifying more sharply the types of patients it should handle. Currently around 35 patients are in the day hospital, the vast majority representing ex-patients; a few representing patients referred directly from the community, for whom day care means prevention of hospitalization.

On a more informal basis there is a night-care program, operating on a very short-term basis, for some patients who while still convalescing wish to obtain community employment before attempting to live on the outside. This program has operated for many years in the hospital, and for certain patients seems an ideal intervening measure before making the final break with hospital culture.

Halfway House.—Great interest attaches to the rehabilitation possibilities of a halfway house. There are relatively few such facilities in America or England. We have had two years' experience with a halfway house for women run jointly by the hospital and a local philanthropic agency. Eight to 10 ex-patients are in residence supervised by a specially trained group social worker. They work, pay rent and cooperate in running the home. The maximum duration of stay is 6 months. Altogether about 35 women have utilized this facility and preliminary study indicates that it is a highly successful endeavor. There is a need for more housing facilities of this type for persons who either have no home to go to, are at odds with their family, or need the continued support of group living with close supervision by a house mother and the contact with the hospital.

Social Therapeutic Club.—These clubs abound in England and are growing in America. Our last survey done about a year ago(11) indicates around 22 therapeutic clubs in existence in America; "Recovery, Incorporated," which stems from the work of Abraham Low(9), has many branches in many states. Our social therapeutic club, known as Club 103, is an active, ongoing

organization which, despite changing personnel, manages to get a good deal of work done. It has headquarters in a house across the street from the hospital, which the patients have refurbished through their own efforts. They carry on social, recreational and educational functions, raise money and give mutual help to each other. Numerous testimonials by members of this club and others in the country suggest high therapeutic value of club membership for many patients who are otherwise socially bereft. There are indications that the club can reduce readmissions and can facilitate the process of gaining roots in the community. Such organizations need intensive study from the standpoint of hospital-club relationships, degree of autonomy needed, optimal organizational pattern, and so on.

In following the patient into the community, our preliminary researches indicate that while many of them can use additional counseling and training, at the vocational level most of them, with varying degrees of effort and experimentation, are able to make a reasonable adjustment(8). Often there is a period of vocational experimentation, particularly in the case of the schizophrenic patient, before settling into a congenial job situation. Not infrequently there is conflict over whether to tell employer and friends about their history of hospitalization. But for most of our discharged patients, the rehabilitation potential, still inadequately assessed(1), seems high enough to warrant cautious optimism.

These experiences have taught us that patients are themselves often most acutely aware of the measures necessary for their social reintegration and should be tested out at all stages of their development as to their potential for assuming increasing responsibility for their rehabilitation. On numerous occasions we find that they can act positively and decisively where practical considerations may cause administrative hesitations and waverings.

Conclusions

The Rehabilitation Project of the Massachusetts Mental Health Center has been based on the conceptions that mentally ill patients have untapped potentialities for successful adjustment, and that optimal work in the field would require mobilization of patients, hospital and community resources in a comprehensive effort.

The introduction of a new program requiring close collaboration of many services and disciplines has had a noticeable impact on hospital structure. Some role groups, especially psychiatrists and social workers, appear to be threatened by the new emphasis. Other role groups such as nurse, occupational and industrial therapists, have enjoyed a reinforcement of their status, and increased value seems to be attached to their functions.

The experiences thus far with day hospital, halfway houses and social therapeutic clubs indicates that these methods have specific value in selected cases. Intensive investigation is underway to determine optimum relationship between the special facilities and hospital organization, degree of autonomy needed by patients, and factors determining success or failure of patients in ultizing different rehabilitative procedures.

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DISCUSSION

FRANKLIN S. DUBOIS, M. D. (New Canaan, Conn.).—The authors of this important contribution are to be congratulated on their broad and realistic approach to the vast problem of rehabilitating the mentally ill. While optimistic in their view that mentally ill persons have significant potentialities for rehabilitation, they likewise point out that such potentialities must be adequately assessed in future studies before enthusiastic optimism for rehabilitation can be wholeheartedly endorsed.

The soundness of the long term research program envisaged by Dr. Greenblatt and his associates is attested by the wisdom with which they have selected their first area of investigation, the effects of such a program on the hospital and on the individuals that make up the rehabilitation team. All too often the primary approach to the problem of rehabilitation centers around what are frequently interpreted as unfortunate and even uncooperative attitudes on the part of the patient. But in the present study the authors reverse the process and come to grips with the more fundamental issue of how an effort to help the patient reassume his place in the community affects the personnel involved in the effort. Seemingly, from the authors' observations, every member of the rehabilitation team is threatened to a greater or lesser extent by the execution of the program and accordingly each individual reacts in a defensive and sometimes hostile manner. Such feelings and actions on the part of the members of the team would presumably affect deleteriously the rehabilitation of patients; hence, one might conclude from this provocative study that the first and perhaps paramount problem to be resolved in the initiation of any program of rehabilitation is to harmonize the divergent attitudes of those participating. Thus the psychiatrist, who usually directs the program, is faced with a problem in interpersonal relationships either before or certainly shortly after the project gets underway. It is interesting and important to note that the authors stress the insecurities and vexations of the psychiatrist himself as he participates in such a program. They tacitly indicate that he must relinquish his active interest in intimate psychodynamics and cultivate a practical perspective that will enable him to assume a role of leadership in guiding other members of the team in their efforts to help the individual patient fit "optimally in society." This, it seems to me, is the core of the thesis that Greenblatt and his co-workers present. First the psychiatrist must achieve emotional harmony within himself before he is qualified to lead: then he is in a position to normalize the different points of views of the other members of the team and infuse them with the enthusiasm, the wisdom and the warmth that make practical goals attainable. This high level of group morale fosters high motivation in the individual patient and these two emotional drives overcome many of the obstacles that the mentally ill patient inevitably meets as he returns to extramural life.

HOMEMAKER SERVICE IN PSYCHIATRIC REHABILITATION[1]

C. KNIGHT ALDRICH, M.D.[2]

INTRODUCTION

Although an emotional illness presents problems of adaptation to members of the patient's family in any circumstances, the problems are most disturbing and far-reaching in their effects on family solidarity when the patient is the mother of young or adolescent children. Children inevitably suffer from separation and loss of maternal support whenever a mother is hospitalized for any reason, but when the mother is mentally ill the children must also cope with their own concept of mental illness: *i.e.*, a condition which to them is certainly mysterious, perhaps shameful, and often treated by friends or schoolmates with derision. Moreover, during the early phases of her illness, the mother's attitudes or actions may have estranged or frightened the children. As a result, the children often develop ambivalent feelings, which are followed by guilt and self-condemnation when the mother leaves for the hospital.

Cheryl, aged 6, had been a reasonably well-adjusted child before her mother was committed to a state hospital for treatment of paranoid schizophrenia. Shortly thereafter Cheryl was reported to be "wistful and clinging, wondering if mother had gone to the hospital to have another baby. She worries constantly, thinks she is naughty and wishes she could go to heaven. She repeatedly asks: 'I have been a good girl today, haven't I?'"

The patient's husband may experience ambivalence, anxiety, shame, guilt, and estrangement, which lead to preoccupation with his own reactions and an inability even to give the emotional support he customarily offers his children, to say nothing of the added comfort they require at this time. Although the husband may receive casework help in understanding his wife's illness as part of the psychiatric treatment program, the caseworker usually focuses primarily on the interaction between the patient and the rest of the family, and gives secondary consideration to the day-to-day problems of the children.

Care of the children is most often assigned to relatives, who may or may not welcome the opportunity. If the plan requires the children to move out of their home, it usually means the loss of many of their sources of security: father, friends, school, and familiar surroundings. If the children are distributed among various relatives they lose the security of each other's presence. When a relative moves into the house to take over the children's care, consequent tensions within the family may complicate the picture.

Families without available relatives try various alternatives, none of which is completely satisfactory. Housekeepers are hard to find, and prefer to avoid homes where children are upset; the patience of the neighbors wears thin; and there are serious psychological hazards in turning over the mother's responsibilities to an older daughter.

When Mrs. C. was committed to a state hospital her 12-year-old daughter undertook the care of 3 younger siblings. In her new role in the home, she conferred with her father about domestic problems and the care of the children, and in other ways took over many of the responsibilities and prerogatives of a wife and mother. Superficially she appeared to enjoy the opportunity to take her mother's place, but at the same time her father noted that she had become anxious and apprehensive in her relationship to him, that she complained of insomnia and nightmares, and that she had become unreasonably possessive of the baby.

When other alternatives fail, the father may be forced into placing the children in temporary foster homes, an experience which, however well carried out, cannot help but add another increment of insecurity for the children.

When a young woman went to the hospital with schizophrenia, her husband, upset, depressed and unsure of himself, made rather precipitate plans for foster home care for their two children. The children, confused, perplexed and distressed, suffering from the double loss of both mother and father at the same time, attempted to establish some kind of relationship with the foster parents. Meanwhile the mother improved and returned home, but became very upset because the children were in the

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care of somebody else, and insisted on their return. Almost immediately thereafter she relapsed, and the whole pattern repeated itself.

DESCRIPTION OF HOMEMAKER AND SERVICE

In many communities a more satisfactory alternative is provided. One hundred twenty-eight social work agencies in this country provide *homemaker service* to care for children in their homes when the parental function is impaired. Homemakers are women who are part of the agency staff, who are trained and supervised by caseworkers, and who work primarily in homes where the mothers of young or adolescent children are temporarily and unavoidably absent. Homemakers are chosen for their interest in children, their ability to get along with people, and their homemaking skills. They usually have enjoyed family life and have been successful as parents of children who are now grown. Casework is an integral part of homemaker service; it is used both in determining its appropriateness for the particular family under consideration, and in helping the family to make the best use of the service and to work out associated problems.

Although originally developed to provide substitutes for mothers with physical illness, this program has found gradually increasing application in homes where the mother is suffering from mental illness. In some agencies more than a quarter of all the homemaker assignments involve cases of mental illness. To my knowledge, however, there is nothing in the psychiatric literature which describes it, and psychiatrists generally either do not know of its existence, or know too little of its nature and indications to work efficiently with the supplying agency. The optimal functioning of homemaker service in families where the mother is mentally ill depends to a major degree on familiarity of the psychiatrist with the extent and limitations of agency services as well as on familiarity of the agency with the treatment goals of the psychiatrist.

The object of this paper is to clarify homemaker service for the psychiatrist. Once psychiatrists know of its existence and understand its operation, I feel confident that they will find it a new and valuable adjunct in the treatment and rehabilitation of many of their patients. Furthermore, awareness of its potential value may encourage psychiatrists to use their considerable community influence to support its development and extension.

The material of the paper is derived from my experience over several years as psychiatric consultant for the Minneapolis Family and Children's Service, as participant in their training program for homemakers, and in collaborative work with the agency in a few cases where a mother of young children was my patient. My illustrations are drawn from the records of 16 cases which were presented at consultation seminars during a 4-year interval, and which were selected from over a hundred cases in which the agency participated in that period.

PREREQUISITES FOR HOMEMAKER SERVICE

Homemaker service is indicated for families in which the mother of young or adolescent children is mentally ill under the following 6 conditions:

1. *If the father or other responsible adult is living in the home.* This requirement is essential since it is impractical for social agencies to take full responsibility for families. Furthermore, the goal of homemaker service is the maintenance or reconstitution of the family; one of its major advantages over foster home placement lies in the fact that the father is kept in close contact with his children during the period of disruption caused by the mother's illness. His home and his children sustain him in his deprivation and may give him the support necessary for him to maintain the integrity of the home, which in turn makes it possible for the mother to return to familiar surroundings for her convalescence.

2. *If the illness appears to be temporary,* or during the period that plans for permanent care are being developed. Although the accepted limits of homemaker care have increased from a few weeks to a year or more, most agencies cannot yet undertake indefinite care. If it appears unlikely that the mother will ever return, an alternate plan, tailored to the specific needs and resources of the family, may be necessary. Often the agency may help the family work towards the develop-

ment of a suitable permanent plan, meanwhile providing temporary homemaker service to allow enough time for the details to be worked out. A temporary solution without radical change in the family structure can protect the father from taking immediate steps out of desperation, steps which may damage the security of the family or in other ways prove unsatisfactory.

3. *If the family participates in casework.* In homemaker service, as contrasted to housekeeping services, the agency takes casework responsibility for the welfare of the children and hence must maintain contact with adult members of the family as well as with the homemaker. The homemaker's primary responsibility is child care rather than housework. Since she does not have professional training she relies on the caseworker for much of her understanding of the specific problems of children deprived of their mothers. To give adequate guidance the caseworker must know the details of the family situation. The caseworker also clarifies the homemaker's function with the father, and in so doing helps him to maintain his role in the family. In regular contacts with the father, she may also be able to help him understand some of his own feelings concerning his wife's illness. Casework participation may forestall the tendency of some fathers to delegate all parental functions to the homemaker, and the tendency of others to limit the homemaker to housework and menial duties.

Casework may be even more important with the mother during her convalescence as illustrated by the following abstract of a record of casework interviews with Mrs. P., a convalescent patient, concerning her relationship with Mrs. H., the homemaker:

> For the first two weeks Mrs. P. was home from the state hospital she seemed very happy with homemaker service. She then began to feel guilty that she needed a homemaker, and later complained that the homemaker's ability to handle the work and care for the children implied criticism, and seemed to emphasize her own inferiority as a mother. Later Mrs. P. admitted her jealousy of the place Mrs. H. had with the children. Mrs. P. also said that Mrs. H. seemed like a mother to her. She recognizes that a good deal of her reaction to Mrs. H. is a reliving of her relationship to her own mother. Mrs. P. also says that when she is feeling depressed she likes to be alone and doesn't want someone constantly in the house.
>
> From Mrs. H.'s description of Mrs. P.'s depressed days, Mrs. P. apparently withdraws from the reality around her and seems almost in a "trance," not seeing the children and not carrying out her household work. Mrs. P. frequently has asked whether having someone one or two days a week wouldn't be enough. For one week we did have Mrs. H. go in for 3 days, but Mrs. P. seemed frightened at the evidence that her idea of reduced service might be accepted. Although she feels she should manage alone she has a strong conviction that she is unable to. In my discussions around this I have tried to help Mrs. P. look at her resentment of the homemaker as acceptable and natural. I have tried to help her justify having service in order to give her more opportunity to get well. Much of this Mrs. P. can understand on an intellectual level, but she continues to struggle with it emotionally. On one occasion she mentioned "giving" the two youngest children to her sister since she could never be an adequate mother, and on another occasion she was so sure that she was bad for her family that she talked of getting herself re-committed to the state hospital to give her family a chance to escape her.

Through the agency, the state hospital follow-up clinic was kept informed of progress and problems in this patient's convalescence.

4. *If the mother is in the hospital or convalescing at home, but not if she requires psychiatric nursing care or supervision.* Homemakers are not trained in nursing; their primary orientation is toward child care, and they cannot undertake supervision of confused or suicidal patients. Furthermore, since the homemaker's role with a convalescent mother requires unusual tact, flexibility and understanding, an agency may not always be able to provide individuals who can adapt to the situation.

5. *If the agency and the psychiatrist with responsibility for the patient's treatment maintain lines of communication.* On application for homemaker service, the family is customarily asked to sign a release of medical information. Without medical information, the agency cannot properly determine the applicability of its services, and will probably withdraw from a case where medical information is not made available.

This is particularly important when the mother is convalescing at home. Often such a patient will confide in the homemaker or the caseworker. She may reveal the first evidences of relapse, or suicidal preoccupations, or dissatisfactions with treatment to the homemaker. The psychiatrist therefore

should keep posted on the homemaker's observations.

One homemaker reported: "When the 8-year-old boy was leaving for a weekend trip to his grandmother's, I heard his mother say: 'Go ahead and leave me. I'll get well while you're gone. It's you who makes me ill. You are deliberately driving me into my grave.'" The homemaker, although distressed at this incident, did not attempt to interfere with the interchange, but informed the caseworker by 'phone after she left the patient's home. The caseworker used this and other similar evidence in a later discussion with the psychiatrist and the patient's husband which led to the patient's rehospitalization.

When communication is easy between psychiatrist and agency, the psychiatrist has an opportunity to suggest appropriate attitudes and measures for the homemaker to adopt. Although the milieu cannot be regulated as thoroughly as in a hospital, the caseworker passes on and interprets the psychiatrist's suggestions to the homemaker, who usually can carry them out more objectively than can either a relative or the customary type of domestic help. The psychiatrist can arrange to receive progress reports from the caseworker at regular intervals by telephone or mail.

6. *If the total family plan involving homemaker service is realistic.* The following case illustrates some of the factors leading to the agency's decision that homemaker service could not be provided.

Dr. X. advised Mrs. Y., a mother of 3 small children, to enter a private psychiatric hospital. Mr. Y. was a college student who worked evenings in a bowling alley to support his family. Their income was $200 a month; Mr. and Mrs. Y. were residents of a neighboring state, and ineligible for local hospital care except in private facilities. Mr. Y.'s hospitalization insurance would cover no more than a small fraction of the hospital bills. The children needed care in the evenings when their father worked, requiring a homemaker to return home late at night with poor public transportation. (Most homemaker services can only supply daytime care.) Although Mr.Y. stated that his wife would be much more upset if the home were broken up or if they returned to their home state, the agency did not believe it realistic to institute homemaker service.

EVALUATION

As with other aids to rehabilitation, it is virtually impossible to demonstrate the results of this program in clear-cut or unequivocal terms. So many factors enter into each individual situation that no adequate controls can be established, and recourse must be taken to anecdotal evidence.

Thus homemaker service appeared to alleviate the tensions in all 3 of the families mentioned in the first part of this paper. Six year old Cheryl, who thought she was naughty and wished she could go to heaven, became much more relaxed and began to take an interest in school and her friends. In the second case, Mrs. C.'s 12-year-old daughter, relieved by the homemaker of the responsibility of the home, could resume her little girl relationship to her father and avoid the tension associated with the role of substitute wife. The children in the third example, who had oscillated between their own and a foster home, could remain at home, even though their mother continued to have periods of exacerbation and remission. Protected by the homemaker's calm and balanced attitude, they were better able to overlook their mother's peculiarities and give her the encouragement of their support in her eventual convalescence.

Direct and indirect observations of the effects on children, on fathers, and on the patients, therefore, lead me to believe that homemaker service can make a substantial contribution which cannot be duplicated by any other existing service for any group in our society. In most agencies therefore, homemaker care is not restricted to the indigent. Agencies with fee-for-service programs provide homemaker care to any income group, scaling the fee to the income of the patient's family. The following case is typical:

When the mother of 3 small children required sanitarium care for a depression, the psychiatrist recommended homemaker care. The father, a well-to-do executive, could easily have hired a housekeeper through an employment agency. He recognized, however, that a homemaker was better for the children than a housekeeper who did not have the advantages of contact with casework services, or than a somewhat controlling grandmother whose presence in the house would have been a serious threat to the mother. After a few weeks the mother returned from the hospital, then relapsed, and later came home again. Meanwhile the homemaker, bulwarked by the agency, gave consistent support both to the father and to the children

through the periods of transition. She made it possible for the rest of the family to give security to each other during the mother's illness, and for the mother to return to a familiar and organized environment during her remissions.

SUMMARY

Homemaker service contributes substantially to the rehabilitation of mothers of young or adolescent children who require, may require, or have required psychiatric hospital care. It also contributes substantially to preventive psychiatry through decreasing the insecurity and anxiety of the children involved. The development of homemaker services can be materially assisted by the influence of psychiatrists in their communities.

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CONTROL PROBLEMS IN GROUP THERAPY WITH AGGRESSIVE ADOLESCENT BOYS IN A MENTAL HOSPITAL[1]

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Certain adolescents strain the limits of group living as well as of group therapy and bring up the problem of formulating conditions which will permit continued group interaction. Indeed, most mental hospitals find it more convenient to care for their teen-age patients by dispersing them among their adult patients. This avoids some of the tensions and acting out. It is only when continued group interaction is a safe reality that one can utilize usual techniques of a dynamically-based psychotherapy. The problems of supplying and maintaining these conditions are the subject of this paper.

Although many groups of disturbed adolescents have been optimistically started, they usually disintegrate. There is little relevant literature(1). Aichorn(2) emphasized that the most difficult of all children to work with were those with problems of aggression. Eissler(3) wrote of the difficulty of treating delinquents because of their narcissistic quality.

The group to be considered consisted of a core of 8 boys, both white and colored, varying in weight from 120 to 190 pounds, and in age from 13 to 19, all living in the same building in a large public mental hospital. Diagnoses included schizophrenic reaction, catatonic type, mental deficiency with behavioral reaction, sociopathic personality associated with anti-social reaction, emotionally unstable personality and chronic brain syndrome secondary to convulsive disorder. These boys lived on different wards. A total of 15 patients came into the group, but some left to go home or to be transferred to other services. The group of 8 boys remaining had a diversity of symptoms, but the ones of immediate and crucial concern centered about fighting, stealing, homosexual activity, inciting of others, and homicidal acts. It quickly became apparent that the group's continuation depended upon the handling of the impulse-ridden acting out behavior of these boys who had little evident superego control, almost non-existent frustration tolerance, and the need for immediate translation of anxiety into action. A number of the boys had made homicidal attempts while at reform school, either with or without psychotic episodes, and had to be transferred to a mental hospital. Others had extensive histories of truancy and automobile stealing prior to hospitalization. They had little confidence in adults, having been rejected or ejected from home and previous custodial settings. Their recurrent fighting, running away, stealing and ganging up on weaker patients made them thorny misfits, even in the hospital. Although there were 2 quiet boys, the group was taken over by the impulsive and active members. There were 2 sessions a week. The treatment goal was to see what modifications the patients could make in the control of antisocial aggressive impulses and if they could be helped to fit into a group situation that might carry over to the wards and to the outside world.

The first statement of the first session, made by a dominating, defiant boy from his perch on top of a table was, "I'll be damned if I'll go to a meeting I'm ordered to go to. Nobody can order me around, not even my old man. When I was little I took orders, but now he knows I can knock his block off." In another session one boy said to another "If you say that word again, I'll kill you." The word was said and the fight started. During many of the early sessions, Slim (a boy often engaged in homosexual activity and hated because he knew the sexual needs and fears of the others) was in real danger of being beaten up. He handled this danger by retiring to a sofa in the room and pretending to sleep, or by trying to leave the group. These problems—refusal to attend, fighting, and passive withdrawal—were the ones which had to be faced early in therapy.

[1] Read at the 113th annual meeting of The American Psychiatric Association, Chicago, Ill., May 13-17, 1957.

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Anxiety was often expressed through fighting, which included the attempted use of such weapons as ashtrays, chair arms and shoes. Sometimes the boys walked angrily and menacingly about the room, threw open windows, beat the window panes with their fists or tried to burst from the room. There was frequent withdrawal to far corners of the room, attempts to set up competitive subgroups, breaking up of furniture, shouting, and tipping over chairs.

The verbal accompaniment of this action sounded like a group of seals at feeding time. "Nobody gives a good God-damn about me; every doctor I see just shuts the door in my face." Or, they often shouted "All you have to do is let me out and I'll be all right. Everything wrong with me came from being in this hospital." And (about the therapists working with them), "You just do this because you get paid to." They seemed to care less about having requests granted than in stating these fierce, howling, resentful complaints. When this was taken up by the therapists for discussion, the result was often a denunciation of the group, and an attempt to leave it.

There is an enormous distance between the consulting room and the group's therapy room in which, for a long time, words were only a minor obligato to destructive action. The problem, again and again, was how to keep the group going. The play techniques of child therapy were not readily applicable, for these patients would not engage in group play or would handle it disruptively. Nevertheless, it was closer to child therapy than to adult work because it involved considerable reaching out in various ways, tolerance for a great deal of movement, and the need to set and follow through with firm limits. It was found helpful to supply to the boys who remained in the group certain tangible benefits—refreshments during the sessions, and the opportunity of meeting with adolescent girl patients for activities and dances.

The following were felt to be pillars of the treatment: 1. Strict sameness of meeting place, time and therapists; 2. the use of relatively indestructible furniture in a fairly bare room; 3. individualization of limits; 4. active intervention in fights and in withdrawals from the group; 5. pleasurable variation of activities such as parties and games for members of the group outside of the regular sessions.

When it was necessary to change rooms, there was much complaining and one patient (Shawn) refused to come. He only returned several weeks later when we began to learn the importance that the sameness of meeting place held for this erratic and changeable boy. At another time, when one of the therapists was unexpectdly absent, a boy asked to go to the bathroom. During this time he stole a watch, an act which did not occur again during the sessions. This need for sameness resembled the bedtime needs of the much younger child who is reassured by the enactment of rituals.

We found, after experience in different kinds of rooms, that the boys felt more comfortable in a room with heavy simple wood furniture. When they were in more elaborately furnished rooms, they picked apart overstuffed chairs, pulled off chair arms, and became preoccupied with hiding the pieces. Whereas, with some children and adults such concern about broken things could have been therapeutically useful, in this group the anxiety was only translated into more destructive action.

It was not possible to apply one set of limits for all the boys. For instance, when Slim, a tormenting clinging boy, said he was never coming back, he was repeatedly brought back to the group by the attendant and experienced relief on being returned. But when Shawn, impulsive, explosive, refused to come it was recognized that he was too upset to be in the group at that time, and he was permitted to stay away. Most of the group made strong demands at some time or other to leave, saying, "This group don't do nothing but get you into trouble," but later were able to express relief that this was not permitted. Thus, attendance was often not a voluntary choice.

Active intervention in fights became necessary right away. During one session the most defiant member of the group hit the smallest member, a boy who acts as homosexual partner for anyone on the ward. At this point, the male therapist and the attendant broke up the fight. Joe then tried to use his shoe as a weapon, but the male

therapist took away his shoe and held him down during the rest of the session. This was followed up by seeing him after the session to emphasize that fighting could not occur during the group meeting. The strength of his impulse to fight and his difficulty in controlling it was recognized, but it was firmly stated that we would prevent the group from breaking up in this way. Following this, Joe was able to play at aggression, then to verbalize some of his aggressive fantasies. He wandered around outside of the circle of chairs, lay on the floor, lifted an ash tray to show the doctor that he would like to hit him, lifted a table high, and said he would like to smash it down on the therapist. Then he was able to bring out the fantasies of making the woman therapist scream by hurting the male therapist, then slapping her and telling her to shut up. He told a dream of being frightened by a girl and cutting her throat. The group tolerantly listened to this, assured him that his thoughts were not too "terrible" for them to accept, then moved on to some of their more immediate concerns. Incipient fights were sometimes averted by questioning or directive statments, such as "Does it seem as though this is the only way of handling it?"

One member was ejected through group vote for a time after it became clear that he could not help himself from being the primary source of the fights. This was permitted by the therapists who agreed that the boy was not able at that time to use the group. Others, while demanding to quit, experienced relief at not being allowed to do so. They seemed to say, "Don't let me quit, even though I complain and holler."

Controls in the sense implied in this paper often appeared to be direct gratification of need rather than the taking away of freedom. Part of the ego deficit seen in these boys was reflected in lack of control over motor apparatus. Therefore, the supplying of controls and restraints afforded relief and a pleasurable component comparable to the satisfaction afforded an infant who is swaddled. In this way inordinate aggressive instinctual energy was prevented from erupting in a harmful way.

A further guarantee of safety to the patients as well as to the therapists was the presence of 3 adults in the room—the 2 therapists and the attendant. This reflected a realization of the destructive potential of the boys, and an assessment of our own anxiety thresholds. Within this framework we found ourselves able to deal with fights and with menacing gestures in a more useful way than might otherwise have been possible. Later in the work, having set a pattern of limits it became possible for the woman therapist to be alone with the same group.

The use of two therapists permitted the sharing of concerns, and took some of the edge off working with a group which was so intent on destroying itself. At first little differentiation was made between the two therapists, except that more complaints against the hospital were directed toward the male therapist. Later more differentiations were made. Some of the patients identified with the male therapist, and there was more overt hostility toward him, and at times this was accompanied by a protective attitude toward the woman therapist.

The first sessions erupted into anger, fighting, teasing, and bursting from the room. When the group was comfortable that limits were safe and strong, a second phase, a verbal one, followed the action phase. This second phase was one of intense preoccupation with self, the "I just care about my own self" phase. For many months this was the central theme. Over and over the members said "I can't put myself in nobody else's shoes. I just think about me." Shawn spoke of "What a man does is his own business. He should be able to jump off the Empire State without it being somebody else's business."

From this period of "I just care about my own self" the group went on to complain that no one else cared for them. "I wonder if you are asking if we care about you?," asked one of the therapists. This was followed by silence, and then by a violent fight between 2 of the group members on the wards. At this time there were numerous attempts to leave the group. Soon after, the group protected a quiet patient from the verbal attacks of Joe and ejected Joe, for fighting, for several months. Then the early signs of group loyalties began to show and the patients were able to work together at times

for activities, although at other times they destroyed the activities they had asked for. Often cooperation was destroyed by the difficulty in identifying with someone else. For instance, when in joint session with the girls, their plans could not be carried out exactly as they wanted, they could not compromise. "Never mind, forget about the whole thing" was the angry way they often met a compromise suggestion.

A disappointment for the therapists was that more verbalization did not take place at first. However, this was replaced by an acceptance of much movement in the room, and an attempt to use this as material for the work, until the group took it up and used it also.

Overt transgression of the usual morality among some of the members at times increased the difficulty of working with them. This was particularly true when a more vulnerable member of the group was attacked. Antisocial acts within the group made it more difficult for the therapists to empathize with, and reach out toward certain members. With those boys it was necessary to act as superego through a member of the group or to use the group to test the destructiveness (and self destructiveness) of such action. Because of the predominant acting out, and the use of such defenses as denial and projection, it was often many months before a boy would accept the idea that he had anything to do with his own problems of living.

Summary

This paper deals with group therapy of 8 adolescent boys in a mental hospital. The group was dominated by the impulse-ridden acting out destructive members. How to keep the group going with these boys who were bent on destroying it became the therapists' central problem. The theme of most of the sessions was "I just care about my own self." Pillars of treatment were 1. sameness of meeting place, time and therapists and attendant; 2. relatively bare room with strong furniture; 3. individualization of limits; 4. active intervention in fights and withdrawals from the group; 5. the use of tangible incentives for remaining in the group, that is, extra activities planned such as games and parties with the girls. Special difficulties for the therapists in working with such a group were discussed.

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A NEUROPHYSIOLOGICAL TEST FOR PSYCHIATRIC DIAGNOSIS: RESULTS IN 750 PATIENTS[1, 2]

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There is little need to elaborate the statement that present day psychiatry lacks valid objective aids to clinical diagnosis. Except where he suspects a condition with recognized specific organic etiology, there is almost no laboratory information upon which the clinician can call for assistance in a problem of differential diagnosis. This paper presents validating data for a laboratory test which seems able to provide useful information of this kind. We have called this test the "sedation threshold"(1).[4]

The test is a neurophysiological determination, the threshold being the amount of sodium amytal required to produce certain EEG changes. It was developed as an investigative tool for research on neurophysiological aspects of affect. During the course of this work, the relevance of the test for several problems of psychiatric diagnosis became apparent. Some of the relationships between the threshold and psychiatric variables, such as degree of manifest anxiety, were documented in earlier papers(1, 2, 3, 4). These reports were based on considerably less case material than the present analysis of data on 750 consecutive patients. The present paper serves two purposes: 1. to confirm and elaborate earlier findings; 2. to bring together all of the material on the sedation threshold with a bearing on problems of psychiatric diagnosis.

[1] Read at the 113th annual meeting of The American Psychiatric Association, Chicago, Ill., May 13-17, 1957.

[2] Supported by grants from the Department of National Health and Welfare and the Defense Research Board (Grant No. DRB 9345-04, Project No. D50-45-04) of Canada.

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[4] The authors wish to thank Drs. J. F. Davis, J. Naiman, J. Mihalik, and A. B. Kerenyi for their contributions to various phases of this research. Thanks are also due to Dr. D. E. Cameron and the members of the clinical staff of the Allan Memorial Institute, who made their patients and their clinical findings available for study.

METHODS

Test procedure.—The procedure for determining the sedation threshold has been described in detail elsewhere(1, 3). A brief description follows: sodium amytal is injected intravenously at the rate of 0.5 mgm./Kg. body weight every 40 sec. while the frontal EEG is recorded. The patient is tested for presence of slurred speech 25 sec. after the beginning of each 40 sec. interval. The injection is continued well beyond the point of slur. Recordings are usually taken from transfrontal and sagittal frontocentral leads; the sagittal recording is measured when there is too much muscle potential artifact in the transfrontal recording. The amplitude of the frontal fast activity produced by the drug is measured to yield what is essentially a dosage-response curve. The typical curve is S-shaped, and contains an inflexion point, preceding which the amplitude of the fast activity increases sharply and following which it tends to plateau. This inflexion point coincides roughly with the time when slurred speech is first noted. In the initial phases of this work we used slurred speech as an auxiliary guide to the sedation threshold, but it has proved to be a rather unreliable indicator. We now use it mainly to indicate whether we have gone far enough with the injection. The sedation threshold is defined as the amount of sodium amytal in mgm./Kg., required to produce the inflexion point in the fast frequency curve. In the first two-thirds of the present material, a hand method was used to measure the curve(1). This method was accurate, but rather laborious. For the past two years, the measurements were carried out by means of an automatic integrator which summates all activity between 17 and 25c/sec. The integrator is described in a paper by Davis(5).

Subjects.—Table 1 shows the sex distribution, age range, and median age of the 750 patient and 45 nonpatient subjects The nonpatient control group was composed mainly

of young male volunteers. Data showing that the sedation thresholds in this nonpatient group were correlated with the number of anxiety symptoms elicited in a 30-minute interview have been presented elsewhere(2). The patients were the first 750 who received an initial, technically valid, test using the 0.5 mgm./Kg./40 sec. injection rate. Actually 1,031 tests were done to obtain this sample; 66 were technically invalid and 215 were repeat tests.

Diagnostic evaluation.—Table 1 shows the diagnostic breakdown of the patient groups. Patients were classified from hospital case records, using diagnostic criteria which have been outlined in previous reports(2, 3, 4). To avoid a large group of unclassified cases, we attempted to force a diagnostic decision in every case. Consequently there were only 29 patients in the unclassified group; in most of these sufficient clinical information was lacking. To obtain some estimate of uncertainty of classification, a psychiatrist who had seen none of the patients examined the files of 200 cases. He was asked to make two decisions: 1. whether the case was typical for the diagnosis; 2. whether the case should be classified under another diagnosis. The reviewing psychiatrist questioned the diagnosis in about one-quarter of the cases on the grounds of atypical features. However, in most of the cases questioned, he was unable to suggest an alternative diagnosis which suited the case better. These findings suggest that, if other workers were to reclassify the case material according to the same diagnostic criteria, the clinical data would remain essentially unchanged.

A few comments about the diagnostic groups may be indicated. The group, borderline schizophrenia, is similar to the pseudoneurotic schizophrenia group of Hoch and

TABLE 1

AGE, SEX, AND SEDATION THRESHOLD BY DIAGNOSIS

Group	No. subjects		Age		Sedation threshold (mgm/Kg)		Percent 4 mgm/Kg or more
	Total	Males	Range	Median	Mean	S.D.	
Nonpatient controls	45	34	17-45	21.2	3.09	0.73	15.6
Psychoneuroses							
Conversion hysteria	31	9	16-62	33.1	2.79	0.54	3.2
Hysterical personality	40	9	21-64	40.5	2.71	0.53	0.0
Mixed neurosis	54	17	18-70	38.3	3.40	0.71	35.2
Anxiety hysteria	22	4	29-56	36.7	3.91	0.84	54.6
Obsessive-compulsive	13	7	18-47	30.8	4.42	1.00	69.2
Neurotic depression	94	32	19-71	41.1	4.78	0.96	90.6
Anxiety state	54	26	19-68	35.3	5.27	0.88	98.1
Psychoses							
Organic psychosis	25	13	38-78	62.5	1.94	0.67	0.0
Psychotic depression	153	63	23-80	53.7	2.81	0.72	5.2
Paranoid state	12	7	19-56	46.0	3.00	0.50	8.3
Manic, hypomanic	10	2	26-63	41.2	3.45	0.82	40.0
Schizo-affective	16	5	24-55	37.5	2.84	0.70	6.3
Acute schizophrenia	19	11	16-46	26.5	2.66	0.69	0.0
Simple schizophrenia	12	10	17-31	25.0	2.67	0.69	0.0
Chronic schizophrenia (except simple)	56	27	17-51	29.4	4.27	0.89	71.3
"Borderline" Schizophrenia	47	27	17-52	30.5	4.70	1.17	83.0
Miscellaneous							
Thyrotoxicosis	11	4	18-51	37.5	4.17	0.19	63.6
Alcoholism and addiction	36	21	23-72	41.9	4.00	1.27	61.1
Character disorder	8	4	16-45	28.3	3.56	0.73	37.5
Neurosis and organic cerebral disease	8	3	17-58	35.0	2.94	0.77	12.5
Unclassified	29	13	17-71	43.3	3.52	1.16	34.5
Total patients	750	314	16-80	39.6	3.65	1.26	42.0

Polatin(6). The distinction between acute and chronic schizophrenia was based simply upon duration of symptoms, the duration being less than one year, and usually less than 6 months, in the acute cases. It should be noted that the chronic schizophrenic patients were "ambulatory" rather than "mental hospital" type patients; few had ever been committed to the equivalent of a state institution. The classification of the psychoneuroses followed conventional lines, except perhaps for the category of hysterical personality; this was assigned to emotionally immature, histrionic patients, whose complaints appeared to be communicative in nature. Patients classed as anxiety hysteria were predominantly phobic. Patients with neurotic depressions and anxiety states were generally of obsessional personality type, and were hard to differentiate, the distinction between them being made according to whether anxiety or depression predominated.

There were 11 patients with thyrotoxicosis, who were collected for a special study of this disorder. The group, "alcoholism and addiction," was composed almost entirely of alcoholics. The data for this group were treated separately because of the possible influence of alcoholic intake upon the threshold. This was not strictly necessary, because a detailed study of psychiatric patients with alcoholism showed that it exerts no specific influence on the sedation threshold(7). Although the sedation threshold was higher than average in alcoholics, this was a function of the symptom picture and personality factors in the same way as with nonalcoholic psychiatric patients. The data for patients with thyrotoxicosis suggested a similar conclusion.

Only 8 patients were given a diagnosis of character disorder. This is an artificially low figure, insofar as the classification scheme emphasized symptoms. If we had emphasized character disturbances rather than symptoms, the size of the character disorder group would have been much greater. The group, neuroses and organic cerebral disease, consisted of patients in whom such diseases as multiple sclerosis and epilepsy were coexistent with a neurosis.

Reliability.—The test-retest repeatability of the sedation threshold has been shown to be very high. In patients whose clinical condition had not changed upon retesting, the correlation coefficient was 0.96. When there had been significant clinical improvement the threshold decreased(8). The effect of previous sedative intake on the threshold was studied previously; it was found that the average threshold of patients receiving no sedation for 48 hours preceding the test was the same as that of patients who received regular psychiatric doses of sedatives(3).

RESULTS

Table 1 shows the means and standard deviations of the sedation thresholds for the various diagnostic groups. It also shows the percentage of cases in each diagnostic category with thresholds of 4 mgm./Kg. or more. The statistical significance of the difference between the means of all groups was determined. Excluding the unclassified group, 210 comparisons between means were possible. Of these 210, 114 were found to be significant at the 1% level of confidence, and 23 at the 5% level of confidence. All subsequent statements about differences between groups are based on statistically significant findings.

Sex and age.—There was no significant difference between the sedation thresholds of male and female subjects. As regards age, there was a small, but statistically significant, tendency for the sedation threshold to diminish with increasing age, the correlation coefficient being—0.30. Further analysis of the data indicated that this negative correlation with age resulted from the fact that the patients with psychotic depression and organic psychosis, two groups with low sedation thresholds, were also the oldest. When these two groups were removed from the main body of data, the correlation between the sedation threshold and age for the remaining patients was virtually zero. Furthermore, the correlations between the sedation threshold and age within the psychotic depression and organic psychosis groups themselves were not statistically significant. It therefore seems reasonable to assume that age in itself probably did not significantly influence the sedation threshold, but that the negative correlation was due to the age distribution of the various diagnoses. In previous studies(2, 9)

certain groups differed considerably in both average age and sedation threshold. It was possible to compare the thresholds of age-matched groups of patients with neurotic and psychotic depression, and psychotic depression and organic psychosis, and to show that their different sedation thresholds were not a result of age differences.

Psychoneuroses.—The data in Table 1 show that the lowest sedation thresholds were found in patients with conversion hysteria and hysterical personality. The highest thresholds occurred in patients with anxiety states and neurotic depressions. These results are essentially the same as reported previously for a smaller sample(3). The progressively greater incidence of higher thresholds as one proceeds from hysteria to the anxiety states is shown in Fig. 1. If one regards anxiety state as the neurosis involving the greatest degree of manifest anxiety, and hysteria as the neurosis involving the least degree of manifest anxiety, the data support the conclusion that the sedation threshold is correlated with degree of manifest anxiety.

It may be noted, however, that the data agree equally well with the conclusion that the sedation threshold is correlated with degree of obsessionality. If one postulates the existence of a continuum of neurotic personality traits, ranging from the hysteric at one end to the obsessional at the other, and considers that the personalities of patients with anxiety states and neurotic depressions were mainly obsessional, it is clear that the sedation threshold is closely related to this continuum. Such a continuum for the psychoneuroses is related to Eysenck's introversion-extraversion dimension of personality(10). According to Eysenck's theory of reactive inhibition(11) one should find lower sedation thresholds in hysterics than in normals. This prediction was borne out by the present data. The mean threshold of the control group was significantly higher than the mean of the hysteric group.

Psychoses.—It seemed possible to divide the sedation thresholds in psychotic disorders into 3 ranges, each with a diagnostic meaning of its own. The distributions of the thresholds divided in this way are shown in Fig. 2. The lowest range is occupied by the organic psychoses. This group of patients had significantly lower thresholds than any other group. The findings in organic psychosis may be related to those of Weinstein and his coworkers(12). They showed that disorientation and denial of illness were easily produced by sodium amytal in such patients, and that this low tolerance to amytal could be taken as a sign of organic brain damage.

The middle distribution of Fig. 2, labelled acute psychotic disorders, was derived from the data of patients with psychotic depressions, acute schizophrenias, schizo-affective states, paranoid states and manic states. The

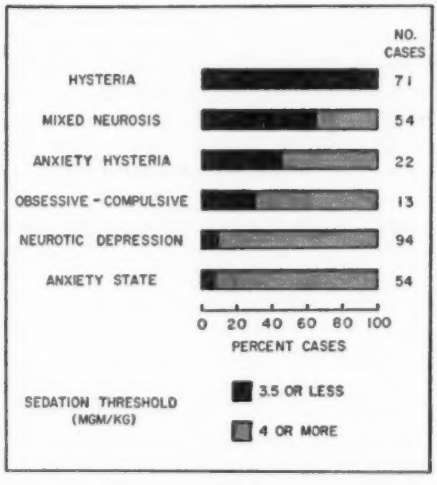

FIG. 1.—Relative proportions of sedation thresholds above 3.5 and below 4 mgm./Kg. in various psychoneurotic groups. Hysteria includes conversion hysteria and hysterical personality.

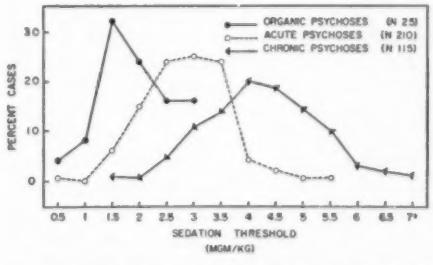

FIG. 2.—Percentage distributions of sedation thresholds in psychotic patients. Acute psychoses include: depression, paranoid, manic and hypomanic, schizo-affective, and acute schizophrenic states. Chronic psychoses include chronic and borderline schizophrenic disorders.

mean threshold in all of these groups with the exception of manic states was in the low range, comparable to that of patients with hysteria. The findings in manic and hypomanic states are still too variable, and too few cases have so far been studied, to allow any clear statement about the expected findings in this group. The thresholds in the remaining groups of acute psychoses were consistently low. On the other hand, the distribution of thresholds for the chronic schizophrenic and borderline schizophrenic groups in Fig. 2. shows that these patients tended to have high thresholds. The group of simple schizophrenias was different from the other chronic schizophrenics in this respect; their thresholds were uniformly low. The thresholds in the group of borderline schizophrenias were significantly higher than those of the chronic schizophrenias.

It is quite clear that there was a marked difference between the sedation thresholds in acute and chronic psychoses. The relationship between the sedation threshold and duration of psychotic symptoms in patients with schizophrenic and paranoid disorders is shown in Fig. 3. This graph shows the percentage of cases with thresholds of 4 mgm./Kg. or more with respect to duration of psychotic symptoms at time of testing. The data do not include the borderline schizophrenics, because of difficulties in assessing exact duration of symptoms in this group. They also exclude two groups which required special definition. One of these two groups may be called "acute on chronic"; it consisted of 23 patients who had acute episodes of psychotic symptoms occurring on a background of chronic symptomatology. The other group, "acute recurrent," contained cases in which an acute episode had occurred for at least a second time, with apparent normal behavior between this episode and a preceding one, which had ended at least one year previously. In both of these groups, the "acute on chronic" and "acute recurrent," the sedation thresholds resembled those of patients with symptoms of one year or less duration, that is of acute schizophrenia. Figure 3 shows that the proportion of high thresholds rose considerably after symptoms had been present for one year, and then tended to remain steady. The critical nature of the one year period with respect to the sedation threshold is noteworthy, if one recalls the significance of the one year duration of illness in statistics dealing with the efficacy of such treatments as insulin coma (13).

Differential diagnosis of depression.—The sedation thresholds of patients with psychotic depression were nearly uniformly low while those of patients with neurotic depression were nearly uniformly high. The distributions of thresholds for these two groups are shown in Fig. 4. The psychotic depression group does not include 12 patients who had received some electroconvulsive therapy (ECT) prior to testing. These were excluded because ECT tends to raise the thresh-

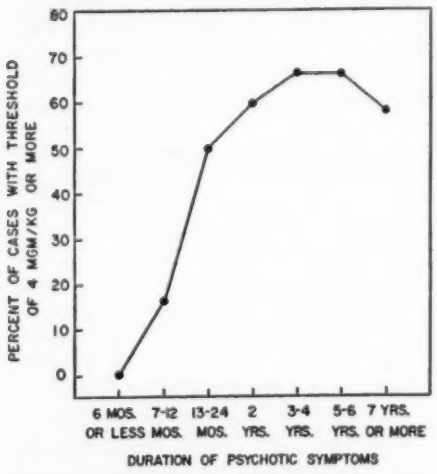

FIG. 3.—Percentage of cases with above average sedation thresholds (4 mgm./Kg. or more) with respect to duration of psychotic symptoms.

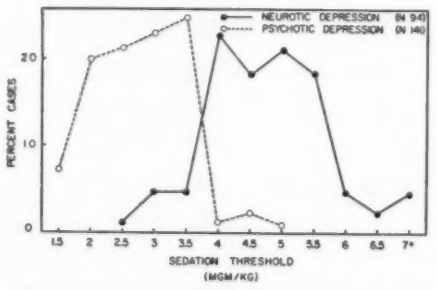

FIG. 4.—Percentage distributions of sedation thresholds of patients with neurotic and psychotic depression.

old(9). It is clear that the neurotic and psychotic depression groups constituted two separate populations with respect to the sedation threshold. This differentiation is perhaps the most clinically useful one provided by the sedation threshold. The test has become almost routinely used for differential diagnosis of depression at the Allan Memorial Institute, as this differentiation is often difficult to make except after a lengthy period of observation.

Relationship between sedation threshold and outcome of ECT.—The differentiation between neurotic and psychotic depression would lead one to expect the sedation threshold to predict therapeutic outcome with ECT. That it does so has previously been demonstrated in the depressive groups(9). It was a matter of some interest to determine whether the sedation threshold predicted outcome with ECT in all types of patients. The case histories of all of the 750 patients who had received 4 or more treatments were reviewed and degree of short-time improvement assessed. "Short-term" refers to the patient's status at time of discharge; we had no follow-up data. Patients who had received ECT in conjunction with insulin coma therapy were not included. Degree of improvement could not be elicited from the clinical records in 20 cases, and these were excluded. This left 292 cases. Degree of short-term improvement was classified into 3 categories: marked, which amounted to remission of symptoms; moderate, where there was considerable relief of symptoms, but the degree of remission was qualified in the clinician's statement; slight or none, where little improvement was judged to have occurred. In applying these criteria, it seemed possible that other workers might disagree as to whether a particular case was markedly or moderately improved, but that there would be very little disagreement concerning the distinction between slight or no improvement and moderate improvement. The data relating the sedation threshold to degree of clinical improvement with ECT are shown in Fig. 5. The graph shows that, as the sedation threshold increased, the chance that a given patient would benefit from ECT diminished. There appeared to be a critical point between 3.5 and 4 mgm./Kg., which is also the critical point in distinguishing neurotic from psychotic depression.

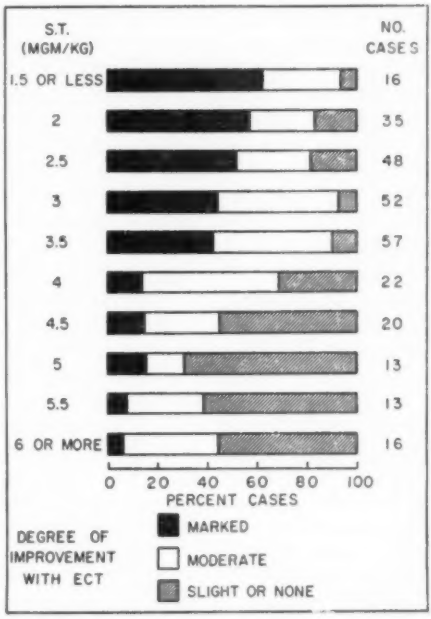

FIG. 5.—Quality of short-term improvement with ECT. as a function of the pretreatment sedation threshold.

DISCUSSION

Present data confirm and extend the previously reported relationships between the sedation threshold and certain psychological variables, which are of psychiatric interest. The most important of these relationships have been formulated as: 1. a positive correlation with degree of manifest anxiety; 2. a negative correlation with degree of impairment of ego functioning, in the sense of contact with reality(2, 3, 4). As degree of manifest anxiety increases, the threshold increases; as degree of ego function impairment increases, the threshold decreases. Neurophysiological implications of the sedation threshold findings in the light of these relationships have been discussed elsewhere(2, 4, 14), with emphasis upon the possible role of the adrenergic component of the reticular formation in mediation of anxiety(15).

In psychoneurotic patients, the sedation

threshold was found to be correlated with relative predominance of hysterical or obsessional personality traits, as well as with degree of manifest anxiety. Studies in progress in this laboratory have so far substantiated the existence of a relationship between the threshold and a dimension of personality similar to Eysenck's introversion-extraversion(10). These two correlates of the threshold, degree of anxiety and personality trend, as well as the fact that high thresholds decrease with reduction of anxiety, may be integrated, if one makes two assumptions. One is that there is more than one neurophysiological mechanism mediating anxiety, as it is clinically recognized. The other is that the mechanism of anxiety in any individual is linked with personality factors. Granted these assumptions, it may be stated that the sedation threshold reflects the degree of activity of that neurophysiological mechanism of anxiety which predominates in obsessional personalities(8). Recent data of Weil-Malherbe suggest that patients classed as hysterics and psychopaths differ from those classed as obsessionals and anxiety states with respect to plasma-adrenaline concentration, the concentration being lower in the former(16). This finding is in accord with the postulated role of the adrenergic component of the reticular formation in mediation of anxiety, and with the evidence linking obsessionality with the type of anxiety measured by the sedation threshold.

The data of this study suggest the following diagnostic applications of the sedation threshold:

1. To measure degree of manifest anxiety in non-psychotic individuals.

2. To differentiate between hysterical and obsessional personality trends and between hysteria and anxiety.

3. A very low threshold may provide confirmatory evidence for the presence of organic psychosis.

4. To obtain some indication of the possible duration of psychotic symptoms in schizophrenic patients for whom an accurate history is unavailable. Chronic cases, except for the simple subtype, will usually have high thresholds.

5. To differentiate between neurotic and psychotic depressions; thresholds are generally high in the former and low in the latter.

6. To predict therapeutic outcome with ECT. In general, the lower the threshold, the better the prognosis with this therapy.

The relationship between the sedation threshold and therapeutic outcome with ECT suggests a parallel with Funkenstein's test of autonomic function(17), which has also been reported to predict prognosis with ECT. However, as yet unpublished data, obtained in collaboration with Dr. R. B. Sloane, revealed no correlation between the sedation threshold and all possible measured aspects of the blood pressure response to Mecholyl in a group of 30 patients. This lack of correlation indicates that the sedation threshold and Funkenstein's test measure unrelated phenomena.

It should be emphasized that the sedation threshold must be applied within the context of other clinical information. Like most laboratory procedures, it is influenced by and related to a variety of factors and does not mean much as an isolated datum. This relative lack of specificity does not detract too much from its usefulness as an aid to differential diagnosis. In this respect it may be considered analogous to such tests as the erythrocyte sedimentation rate, which are also non-specific and must be interpreted in relation to the total clinical picture. Given this qualification, it may nevertheless be stated that experience with the sedation threshold in a clinical setting has led us to review our clinical formulation whenever it disagreed markedly with test findings. In such instances, the impression was that, more often then not, subsequent events showed the clinical opinion to have been based upon insufficient data.

The large number of statistically significant differences between the mean sedation thresholds of patients with different psychiatric diagnoses is of some interest, because of the current and long-standing dissatisfaction with classical psychiatric nosology. Present findings do not necessarily validate the nosological categories used in this study, but they do suggest that the clinical distinctions, upon which these categories are based, probably reflect basic neurophysiological differences.

Summary

The sedation threshold is a determination of the amount of intravenous sodium amytal required to produce certain EEG and speech changes. This paper presents data showing the relationship between the threshold and psychiatric diagnosis in 750 consecutively tested patients. There were also 45 nonpatient control subjects. A large number of statistically significant differences between the thresholds of various diagnostic groups was demonstrated. These differences suggested the use of the threshold for several diagnostic problems, which included: a. measuring degree of manifest anxiety; b. differentiating between hysterical and obsessional personality trends; c. confirming presence of organic psychosis; d. differentiating acute from chronic schizophrenia; e. differentiating neurotic from psychotic depression; f. predicting therapeutic outcome with ECT. It was emphasized that, for clinical purposes, the threshold should be applied within the context of the total clinical picture.

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DISCUSSION

Edward N. Hinko, M. D. (Cleveland, Ohio).—After reading the authors' manuscript, it became immediately apparent that it would be impossible for Dr. Shagass to present in 20 minutes all of the pertinent information he has so diligently gathered and evaluated during the past 5 years on the use of the sedation threshold.

The statement is made that differences between groups are based on a high level of statistical significance. It would have been appropriate to indicate what probability values they considered significant.

Age appears to be a significant factor as seen in the 62.5 median age for the organic psychoses—this group having the lowest mean sedation threshold, 1.94. The data presented would have been more significant if the mean and the standard deviations for age had been provided. It would be interesting to see what changes in statistical results would occur if the authors made adjustments for age and diagnosis.

Standard deviation for sedation thresholds in almost all groups is quite large indicating considerable variation within diagnostic categories which decreases the usefulness of the sedation threshold as a neurophysiological test for psychiatric diagnosis.

The authors have established that the thresholds in psychotic depressions were nearly uniformly low, while those in neurotic depressions were nearly uniformly high, and stated that the test has become an almost routine test for the classification of depression at the Allen Memorial Institute. We would assume that it played no part in establishing the diagnosis of cases reported in this study.

The method used in rating anxiety is not entirely clear. Was it primarily a subjective one? It would appear that objective methods correlating with physiological measures, such as the psychogalvanic skin response, determinations of blood pressure, pulse and respiratory rate, would be more meaningful.

A series of 15 patients with thyrotoxicosis were studied and found to have a relatively high mean sedation threshold, 4.17. Did sedation thresholds in this group change when thyroid function returned to normal?

Assuming that the sedation threshold decreases when thyroid function returns to normal, we would be inclined to hypothesize that the sedation threshold may be an important factor in measuring brain metabolism.

Simultaneous studies of changes in the cerebral arterial and venous blood, and the effect of such drugs as Methedrine on the sedation thresholds of a group of psychotic depressed patients who are reported as having low sedation thresholds, may provide significant correlations. This would suggest comparable studies of patients with high sedation thresholds attempting to determine the effect on the sedation threshold of such drugs as chlorpromazine. Of further value would be the restudying of patients, investigating the effects of electroconvulsive therapy and psychotherapy on the sedation threshold.

The studies which Shagass has reported have been worthwhile and deserve to be continued and refined. They appear to have potential value in the development of objective instruments which, appropriately utilized, will provide physiological data that can be integrated with biological and psychological data, and make it possible not only to predict what pathology will develop, but also under what conditions.

THE EFFECT OF TRANQUILIZING DRUGS ON ENZYME SYSTEMS [1, 2]

JACKSON A. SMITH, M. D.,[3] MICHAEL J. CARVER, PH. D.,[3] AND ELEANOR W. HELPER, M. S.[4]

In an effort to clarify the mode of action of the ataraxics (tranquilizers) and chemically related compounds, 12 were tested for their effects on an enzyme system. The rational of this study was the hypothesis that biochemical activity can be interpreted in terms of enzymatic phenomena and that the ataraxics may influence the activity of enzyme systems.

Enzymes, being proteins and functioning as organic catalysts, are affected by such factors as heat, the acidity of the medium and the availability of their substrate; the majority also require the presence of a coenzyme or a metal or both to be active. A substance altering any of these factors may consequently affect the activity of the system.

Since most enzymes are not completely specific but activate related compounds, they may be competitively interfered with or inhibited by similar substances. There are several types of inhibition, a discussion of which is beyond the intent of this paper except to point out instances in which certain drugs are known to act as enzyme inhibitors, such as acetazoleamide (or Diamox) which reversibly inhibits carbonic anhydrase, disulfiram which inhibits the enzyme which oxidizes acetaldyde and those drugs which inhibit acetylcholine-sterase.

A previous study reported that serum succinic acid and pyruvic acid were moderately increased in a normal subject after LSD_{25} administration, but were markedly increased under the same conditions in a schizophrenic (3). Two reports indicate the phenothiazine compounds inhibit glucose oxidation(4, 6) and another(17) revealed an abnormal glycolytic process in the erythrocytes of schizophrenics.

Several animal studies have shown a hyperglycemic response to chlorpromazine in mice and hamsters(22, 23, 27) and others (8, 14) report a tendency to hyperglycemia in humans or an alteration(12) in glucose tolerance with a prolonged delay in return of the blood sugar levels to normal. Therefore, it seemed pertinent to initiate this project with an evaluation of several tranquilizers on an enzyme system essential to the metabolism of glucose.

In 1942, H. Bruce Collier and Della E. Allen(11), attempting to explain the anthelmentic activity of phenothiazine, reported on the inhibition of catalase, cytochrome oxidase, and succinic dehydrogenase by the oxidation products of phenothiazine. Collier, *et al.*(12), in 1952 reported on the lack of inhibition of succinoxidase activity in rat liver mitochondria by phenothiazine derivatives. The following year Abood and Gerard (2) (1953) found that compounds containing the diphenyl nucleus inhibited the activity of cytochrome oxidase of rat heart mitochrondria from 30-50%. Other studies this same year (1953) reported that chlorpromazine caused a depression of oxygen consumption in slices of cortex from the guinea pig (13), the rat(24), and whole brain homogenates(16).

Finkelstein(15), *et al.* (1954), found that the concentration of chlorpromazine necessary to depress respiration of brain tissue in vitro was not of the same order as the amounts required to evoke a pharmacological response. This was on the assumption of a generalized equal distribution of the chlorpromazine; it was later shown that this product is more concentrated in specific anatomical areas. In 1955 there were several reports of the effects of chlorpromazine on enzyme systems, one showing that this compound caused uncoupling of oxidative phosphorylation of brain mitochrondria using pyruvate as

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[1] Read at the 113th annual meeting of The American Psychiatric Association, Chicago, Ill., May 13-17, 1957.

[2] From the departments of Biochemistry and Psychiatry, University of Nebraska College of Medicine. This study supported by Nebraska Board of Control Fund for Psychiatric Research.

[3] Director of Research, and Assistant Professor of Biochemistry, Research Biochemist, Nebraska Psychiatric Institute, Omaha, Neb.

[4] Assistant Chemist.

a substrate, and that a 50% inhibition of cytochrome oxidase occurred (Abood(1)), and another report found that in animals given chlorpromazine and sacrificed, the pyruvate oxidation and sulfanilamide acetylation were unchanged at 5 times the physiological dose, but that adenosinetriphosphatase was increased in all areas of the brain, and that the greatest increase was in the thalamic-hypothalamic area(19). During this same year other studies reported on the effects of bisphenolic compounds on succinoxidase, cytochrome c oxidase, and lactic dehydrogenase of animal tissue(18); and the influence of increased temperature on the pharmacological properties of chlorpromazine in animals (the symptoms of excitation being more marked with increased temperature(7).

Finally, during the past year (1956), there were two papers on phosphatide labeling in brain slices(20) and on phospholipid turnover in brain(28), as well as further studies on the effects of chlorpromazine and reserpine on cytochrome oxidase and adenosinetriphosphatase(5, 9).

The previous reports that chlorpromazine did not effect the metabolism of glucose to pyruvate and the evidence that it did interfere with glucose metabolism led to this study of the effects of the ataraxics on the succinoxidase system.

METHOD

The tissue was prepared by homogenizing rat brain and rat liver in isotonic sucrose in a Waring blender.

For those not completely familiar with the Warburg technique, the manometric method of Schneider and Potter for the succinoxidase system(26), used in this study will be briefly described. A "U" shaped manometer, one arm of which is open and therefore subject to atmospheric pressure, and the other arm closed, is utilized. The measurements recorded are a reflection of alterations of pressure in the closed system. The changes in pressure are shown by a varying level of the closed column and are in turn converted to a volume reading by a constant. During the experiment the manometer is attached to a shaking mechanism to insure that the rate of diffusion of oxygen into the liquid is not limiting the reaction.

Attached to the closed arm of the system is a reaction vessel with a "side arm" attachment which allows its contents to be mixed with the homogenate. When the reaction vessel and its contents have been equilibrated in a constant temperature water bath, the contents of the "side arm" are tipped into the cup, and readings are made subsequently at 5-minute intervals for one-half hour.

The rise in the level of the fluid in the closed arm of the system reflects the rate of oxygen uptake by the preparation, the converted readings are recorded as a graph (with time plotted against the rate of oxygen uptake). The graph levels out with time as the rate of oxygen uptake decreases with the exhaustion of the substrate, the accumulation of end products (which are either toxic to the enzyme or compete for the remaining substrate), or as the enzyme is denatured (by mechanical agitation or heavy metal ions).

In this study, oxygen uptake rates were determined for a control and with the drug added at several concentrations; each determination being an average from at least 3 different reaction vessels. The relative rate of oxygen uptake was found by expressing control as 100 and rates for various drug concentrations as a percentage of this control reading. The inhibitor was added to the main compartment along with the enzymes and cofactors and incubated for 20 minutes prior to the addition of the substrate which is tipped in from the sidearm.

An assay of the succinoxidase system measures overall absorption of all enzymes concerned, from the removal of 2 hydrogen atoms from succinate, to the final combination of 2 hydrogen atoms with oxygen to form water. The concentration of the various drugs was varied to produce an inhibition ranging from 0 to approximately 80% of the control. The 50% inhibiting dose (ID_{50}) was read graphically: this measure was found to be reproducible from one tissue preparation to another.

DRUGS USED

1. Compounds containing the phenothiazine group:

a. Chlorpromazine—10-(3-dimethylamino-n-propyl)-2-chlorphenothiazine HCl

b. Promazine—10-(3-dimethylamino-n-propyl) phenothiazine HCl

c. Compazine—2 chloro-10 (3(1-methyl-4-piperazinyl-n-propyl) phenothiazine dimaleate

d. Phenergan—10(3-dimethylamino-isopropyl) phenothiazine HCl

e. Wy 1107—10(3-gamma diethylamina-n-propyl) phenothiazine HCl

f. Wy 1137—10(3 pyrrolidyl-n-propyl) phenothiazine HCl

2. Compounds *not* containing the phenothiazine group:

a. Frenquel—alpha (4-piperidyl) benzhydrol HCl

b. Meratran—alpha (2-piperidyl) benzhydrol HCl

c. Mer 22—1,2 diphenyl-1-(4-piperidyl) ethanol

d. Mer 16 alpha, alpha diphenyl-1 methyl-2 piperidinethanol HCl

e. Reserpine

f. Quiactin—2 ethyl-3-propyl glycidamide

RESULTS

The ID_{50} (concentration of drug required to cause a 50% inhibition of the enzyme system from rat liver) of the phenothiazine series varied between 0.3×10^{-3} M and 0.7×10^{-3} M. They were decreasingly effective in the following order: compazine, chlorpromazine, Wy 1137, Wy 1107, promazine and phenergan.

Quiactin was without effect on the system, while reserpine had an ID_{50} at 0.81×10^{-3} M. The other 4 agents investigated in order of decreasing effectiveness were Meratran, Frenquel, Mer 22 and Mer 16. ID for these compounds varied from 3×10^{-3} M to 5×10^{-3} M.

Preliminary results indicate a decreased effectiveness of the compounds containing the phenothiazine group on rat brain succinoxidase system, since the inhibition obtained was only approximately half that of the liver enzyme system at the same drug concentration.

Welch and Bueding(29) have suggested that before the action of a drug is attributed to its effect on an enzyme system, the following criteria should be met: 1. the concentration necessary to produce an effect should be comparable pharmacologically and in vitro, 2. if the drug shows a pharmacological predilection for a particular tissue this affinity should be equally pronounced in vitro, 3. finally, there should be a demonstrable similarity in the effects of structurally related compounds in vivo and in vitro.

TABLE 1

SENSITIVITY OF LIVER SUCCINOXIDASE SYSTEM AND COMPONENT PARTS

Results are expressed as ID_{50} or the millimolar concentration necessary to produce 50% inhibition when compared to control without drug.

Assay	Succinoxidase
Quiactin	69
Meratran	5.6
Frenquel	4.5
Mer 16	3.6
Mer 22	3.5
Reserpine	1.9*
Phenergan	0.68
Promazine	0.61
Wy 1107	0.51
Wy 1137	0.47
Chlorpromazine	0.35
Compazine	0.27

* Theoretical ID_{50} obtained by extrapolation. Reaction mixture is saturated with reserpine at concentrations slightly greater than 0.5 Mm.

In this work only the last requirement appears to have been met since the ability to inhibit the succinoxidase system was of the same order among the compounds containing the phenothiazine group.

Therefore, from this study, as performed, and on the basis of the above criteria, it would seem unlikely that the principle clinical effects of the compounds tested result from inhibition of this particular enzyme system.

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INSULIN COMA IN DECLINE

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In 1958, the insulin treatment of schizophrenia reaches its quarter century. Twenty-fifth anniversaries in therapeutics are usually unruffled—by then, remedies are discarded and forgotten or else accorded some uncontested place, at the very least. If it is otherwise with insulin coma, it is odder still that at its twentieth year it seemed secure and established—the most important therapy for the most important mental disease.

So it might have appeared in 1953, two full decades after its introduction(20). It had met with few adverse reports, and these had been swamped in an enthusiastic deluge; it was recommended unequivocally in the foremost text books of psychiatry in the major languages, with one notable, though hesitating, exception(11); and a generation of psychiatrists had grown up who, in the main, were seldom even aware any longer that its value might be seriously disputable. Although disquietingly negative findings had occasionally come from a few reputable workers, not a single comprehensive review really to challenge it existed until that year, when I sought to fill the gap in a paper entitled "The Insulin Myth." The present essay is to point out the signs of a growing turn of the tide away from insulin now and in so doing, to hasten the exit of an irrational and hazardous therapy.

For the purpose of my critique in 1953, an exhaustive search through the world literature could scarcely produce a dozen published papers that in any way questioned the efficacy of insulin coma, and these dated chiefly from the 1930s and early 1940s. Yet in the period from 1936 to 1946 alone, there were over 700 references to the subject that Bellak(2) could list. "The Insulin Myth" therefore was composed of an exposition of the pitfalls and difficulties inevitable in assessing treatments of whatever kind for schizophrenia; a sceptical analysis, in the light of this, of certain of the innumerable reports favourable to insulin, chosen from the most influential, careful, and typical ones; and an account of relevant personal experience, and of some of the rare dissenting studies. Actually of the latter, 5 had to be omitted(4, 14, 16, 18, 21).

While this criticism of insulin was received as a passing heresy, with a rather heated correspondence in the *Lancet* in the ensuing 3 months, other workers coincidentally expressed similar doubts(10, 17). Now in the few years since, a distinct change is becoming recognisable in current attitudes to insulin, both those expressed in the journals, and those disclosed in the day to day practice of mental hospitals. Apart from there having been in this brief time more published studies controverting its value than in all the preceding 20 years, it is also clear that many centres (*e.g.* 3, 9) have been content, with the arrival of chlorpromazine and reserpine, to allow the insulin coma ritual to fall quietly into desuetude. In fact Boardman, *et al.*(5) demonstrated that in two parallel series each of 50 schizophrenics, there was no difference in outcome between those treated with insulin coma and those with chlorpromazine.

Actually, at least 10 further papers(1, 5, 6, 10, 12, 13, 15, 17, 22, 24) can be listed that explicitly bring the usefulness of insulin into question, and there are others (*e.g.* 19, 23) implicitly doing so. Since some contribute novel approaches both to this problem and to that of evaluating psychiatric methods in general, they require fuller mention here.

The first of these, by Hoenig *et al.*(12), is a disturbingly simple investigation. Their point of departure was the commonplace observation that the results of treatment of schizophrenia in 1948-50 far surpassed those in 1935 with seemingly comparable patients at the same hospital, before insulin coma was introduced. However, unlike many of their predecessors who made similar observations and took them as proof of the effects of insulin therapy, they analysed these differences with a view to discovering to what they might be attributed. It then transpired that

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there were other factors than physical treatments responsible, since an equal improvement in the later generation at this hospital was to be found in other schizophrenics who went untreated by physical methods as well as in those receiving insulin. In a further investigation of these lines(13), in which the longer term prognosis was considered, there was still no certain indication of any special benefit conferred by insulin treatment.

A related discovery was made by Staudt and Zubin(22) during an immense survey of results described with somatotherapies in schizophrenia. It was unearthed in a graphic analysis of the multitude of "controlled" studies in which a treated series is compared with an untreated one. Examining the untreated cases in such reports, they detected an extraordinary tendency for their outcome to be worse than that obtained with "non-specific" therapies in the days before the shock era. In short, the controls in these studies mostly turn out to consist of schizophrenics whose prognosis is singularly bad.

Perhaps the most important development in the field has been the achievement by Ackner, *et al.*(1) of the first controlled trial of insulin coma that is unimpeachable. So ingeniously and elaborately was this organised, that neither patients nor psychiatric assessors knew which individual had been submitted to insulin coma, and which to barbiturate comas devised so as exactly to simulate the standard insulin routine from start to finish. Patients with recent onset of psychosis were selected to be in matched pairs, and randomly distributed between the insulin and the barbiturate régimes. The results in the two groups turned out to be identical and insulin, as such, could be seen to have no advantage over barbiturate.

In a somewhat similar experiment, Boling, *et al.*(6) also introduce independent assessors to the study of insulin therapy. Alternate cases in a series of 73 schizophrenics were given either deep insulin comas or light treatments with insulin in doses only sufficient to produce disorientation. The results were the same with both methods.

Conclusion

Recent trends in the psychiatric literature reveal that disillusion with the insulin coma treatment of schizophrenia has steadily spread in the past 4 years. Since the method has no rationale, and since even its empirical basis now cannot withstand critical inspection, it is of interest to know why it gained almost unanimous acceptance.

Probably three circumstances are at the bottom of it. The first is that a movement for the reform of mental hospitals and for their conversion from inactively custodial asylums to therapeutic centres, was bound to grow in the last 20 years. The second is that such a movement would inevitably have promoted treatment methods that involved optimistic and individual attention to psychotic persons. The third is that in the early 'thirties when all this began, schizophrenics were considered inherently inaccessible to psychotherapy, since Freud adumbrated that they were incapable of forming a transference relationship.

It can safely be said, now that this fallacy has been exploded in the last decade, that were insulin coma a new treatment invented in 1958, it would have no hope of catching on in the way it did. It succeeded because it provided a personal approach to the schizophrenic, suitably disguised as a physical treatment so as to slip past the prejudices of the age. The work of Whitehorn and Betz (24) underlines this point most lucidly. Comparing two groups of psychiatrists, the one psychotherapeutically effective with schizophrenics, and the other ineffective, they found that only the results of the latter were enhanced by insulin coma therapy.

In short, insulin coma treatment may come to be remembered as the first application of psychological healing for schizophrenics in the mass, and its achievement as an inadvertent one—the supply to persons hitherto considered impervious to it, of daily, devoted, personal care.

In 1958, there are more rational ways of doing this, but apart from its irrationality, the insulin treatment exposes both patient and psychiatrist to a number of hazards which are no longer justified. It has a mortality which is not negligible; it is extravagant in the scarcest of mental hospital commodities, namely medical and nursing time; and worst of all, it effectively screens doctor

and patient from other approaches to the problems of schizophrenia.

The psychiatrist in training probably suffers most damage. Juniors are often posted to the insulin unit so that, at its foundations, their knowledge of schizophrenia requires no preoccupation with its subtle psychology and no experience of psychotherapy. Even the proper use of ECT is impeded because it is learnt as a casual procedure, administered sporadically and without system, as an adjuvant to the insulin ritual. One consequence of this is that the phenomena of convulsion dependence(8) are obscured and their correct management subverted.

No doubt, the insulin treatment will be slower to depart than it was to be accepted. The "it-can't-do-any-harm-to-try" argument is not only destitute, it is false and dangerous for both patient and psychiatrist.

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CURRENT CLINICAL AND RESEARCH TRENDS IN SOVIET PSYCHIATRY[1]

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The material for this report was gathered during a visit to the Soviet Union in June, 1956. More specifically, this is a digest of information obtained from discussions with the Director of the Division of Neurology and Psychiatry of the Ministry of Health, U.S.S.R. and from visits to psychiatric and neurologic hospitals, in Moscow, Leningrad and Kiev, and research institutions in Moscow and Leningrad concerned with experimental studies in psychiatry, neurology and physiology.

THE ORGANIZATION OF CLINICAL AND RESEARCH PSYCHIATRY

Clinical neurology and psychiatry are closely integrated in the Soviet Union. The Soviet psychiatrist may be best described as a neuropsychiatrist who has shown special interest in psychiatric patients.

Clinical psychiatry is under the overall jurisdiction of the Section of Neurology and Psychiatry of the Ministry of Health, U.S.S.R., of which Dr. Bobayan is Director. This agency coordinates clinical neuropsychiatric care throughout the Soviet Union.

In the larger urban communities, such as Moscow, the psychiatric care is organized in the following way: there are sections devoted to neuropsychiatry in the general dispensaries throughout the city. If the patient's problems cannot be managed at this level, but if he does not require immediate hospitalization, he may be referred to one of the neuropsychiatric dispensaries situated throughout the city on the basis of district population. These dispensaries have several departments: 1. Adult Psychiatry and Neurology; 2. Child Psychiatry; 3. Statsionars: (a) Inpatient, (b) Day-statsionar.

The adult and children's departments are set up for diagnostic studies and for active outpatient therapy.

The statsionar is a specialized section of the dispensary which serves as an intermediary station between the psychiatric dispensary and the mental hospital. *The inpatient statsionar* has 50-75 beds where acutely ill psychiatric patients, who are too sick to be treated on an outpatient basis, can be kept from one day to one month. It serves as a diagnostic observation unit or as an active treatment service for acute, psychotic patients and is said to eliminate the necessity for long hospitalizations in many instances. It also serves as a temporary haven for psychiatric patients who require separation from a disturbed home environment.

The *day-statsionar* is a unit where psychiatric patients come in the morning and remain all day returning home to their families in the evening. I was told that the inpatient and day-statsionars have facilities for individual and group psychotherapy, organic therapies such as insulin coma, sleep therapy and drug therapy. Occupational and physical therapy, mental hygiene instruction and social service facilities are also available. The day-statsionar ostensibly serves several purposes. It extends help to many patients by affording them the protective care and facilities of an inpatient service without completely divorcing them from their homes. On the other hand it serves a real purpose for the patient who is well enough to be discharged from a mental hospital but who is not yet ready to assume full responsibilities in the community. There are also special "logopedical statsionars" for children.

Next in the chain of psychiatric facilities is the mental hospital. These have separate and distinct facilities for children. Allegedly there are no separate institutions for criminal psychotics. At one time there were a large number of special clinics and hospitals for the treatment of alcoholics. I was informed that only 3 or 4 of these are still in operation. (It should be mentioned that a

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sizeable number of intoxicated men were seen in the streets of both Moscow and Leningrad.) All mental hospital confinements are said to be voluntary except in the case of criminal psychotics who are committed by the court on the advice of 3 psychiatrists assigned to the court. The court can also recommend hospitalization of patients that come before it at the request of the family or community. These patients cannot be discharged until their cases are reviewed by the court psychiatrists.

In addition to these facilities there are sanitariums associated with mental hospitals situated in the rural areas or in the warmer southern districts and which are used for convalescent purposes.

Hospital and research buildings are, in general, very old and antiquated by our standards. Most of those that I visited were apparently constructed during the beginning of this century or earlier. Some of the structures were originally intended for other than medical purposes and only later were converted into research or clinical facilities. Externally the majority appeared in a poor state indeed; however, on interior inspection they were found to be clean and in good repair. One was struck by what appeared to be very large numbers of medical and maintenance personnel.

Home care is said to be stressed in Soviet psychiatry. All patients discharged from mental hospitals are followed by the local neuropsychiatric dispensaries and in the dispensaries connected with the factory or farm. I was told that it was routine practice to send psychiatric nurses into the home in an attempt to help the family adjust to the patient's needs. It is also the job of the dispensary to recommend and supervise any vocational training that may be necessary. During the course of the patient's illness, and until he is able to return to full employment he is said to receive his full wages. Only after it is determined that he will be permanently ill does his normal source of income stop. He is then put on a pension.

Neuropsychiatric research, as well as all other medical research in the U.S.S.R., is organized and carried on in a system of research institutes located mainly in the larger cities, but particularly concentrated in Moscow and Leningrad. The work in these institutes, which may have as many as several hundred personnel on the staff, is coordinated under different administrative auspices, namely: 1. Ministry of Health, U.S.S.R.; 2. Ministry of Health of the Constituent Republics; 3. Academy of Medical Science and 4. animal research relevant to psychiatry may also be carried out in institutions under the jurisdiction of the Academy of Science.

SOME STATISTICAL DATA RELEVENT TO PSYCHIATRY IN THE SOVIET UNION

Broad statistical data coming from a country whose cultural concepts and evaluations are so different from those of the Western countries must not be accepted without first being subjected to careful scrutiny. Indeed, until there is an opportunity for an extended period of careful observation of Soviet psychiatric clinics and hospitals, evaluation of all statistical data concerning clinical psychiatry must be held in abeyance.

The conception of what constitutes an emotionally ill person may differ widely in varied cultures. There are many problems which are cared for in the U.S.S.R. by government agencies other than those under the jurisdiction of the Ministry of Health that would be considered by American or Western European physicians as falling into the realm of emotional or mental illnesses. Many patients who would be categorized in this country as having psychoneuroses or character disorders would never be seen by a psychiatrist in the Soviet Union. Instead they would be considered as having a "sociological problem" and would be accounted for statistically by another government agency. For example, it was my impression that the mentally defective children were statistically accounted for by the "Ministry of Social Assurance." They did not come under the jurisdiction of the Ministry of Health unless they had some other medical problem in addition.

With these qualifications in mind, I would like to offer some psychiatric statistics presented to me during my visit. They were given to me by the Director of the Central Institute of Psychiatry of the Ministry of Health, U.S.S.R. (Professor D. D. Phedotov) and by the Director of the Section of Neurology and Psychiatry of the Ministry of Health, U.S.S.R. (Dr. Bobayan).

The Russians claim, as they did during World War II, that "psychiatric illnesses do not constitute a major problem in the Soviet Union." I was told, for example, that in 1954 there were 6 persons with psychoneuroses per 10,000 general population, or expressed in another way, there were allegedly 120,000 psychoneurotic patients in the U.S.S.R. (calculated on the basis of a total population of 200,200,000. This figure was taken from *The National Economy of the U.S.S.R.; A Statistical Compilation,* Central Statistical Administration of the Council of Ministers; Moscow, 1956). This allegedly represented 6.8% of all psychiatric illnesses. During World II the figure was quoted as 10/10,000 general population. Involutional psychoses were also said to be very uncommon. Schizophrenic patients made up 54.9% of the hospitalized mental patients in 1954, while they accounted for approximately 50% of the patients seen in the day-statsionars.

There are 0.8 psychiatric beds/1,000 general population or a total of 160,000 for the entire U.S.S.R. Reportedly, in mental hospitals, there was one psychiatrist to every 28.4 patients and one nurse to every 5.8 patients. The average duration of hospital stay was 129 days. Allegedly there were 92.7 persons discharged from mental institutions for every 100 admissions. In 1954, 28.8% of all patients entering mental hospitals had schizophrenia. The number of new cases of schizophrenia being admitted is said to be decreasing, while readmissions are increasing. There was an increase of 18% in the number of schizophrenics seen in large city dispensaries in 1954 as compared to 1953. Psychiatric hospitals usually have less than 1,500 beds. The Central Institute of Psychiatry of the Ministry of Health, U.S.S.R., in Moscow, which is probably the leading psychiatric institution in the Soviet Union, has 1,800 beds, a number which was considered excessive by its director. It is staffed by 200 psychiatrists and 1,800 other personnel.

TRENDS IN PSYCHIATRIC TREATMENT

Psychotherapy in the Soviet Union bears little resemblance to the techniques commonly practiced in the Western countries. Analytically oriented psychotherapy never attained a significant status in Soviet psychiatry. Indeed it is held disparagingly and is considered an unscientific theory based on "arbitrary metaphysical idealist concepts." Unconscious conflict is considered to be of relatively little importance. "Psychotherapy emphasizes the patient's relationship with his environment." His difficulties are interpreted as being due to his conflicts with his environment. By techniques of persuasion, suggestion and interpretation the Soviet psychiatrist emphasizes the patient's role in the communistic group. The therapist emphasizes the fact that "the patient is a member of a group and that he will derive great benefits and security *only* from the collective strength of the group."

It is in this context, it appeared to the author, that psychoanalytically oriented psychotherapy has been adversely considered and would indeed fail in the treatment of psychiatric patients in a communistic community. It might render the patient less able to cope with his environment. The pertinent point is that communistic philosophy stresses that the individual is a part of a group and has importance, strength and security *only* as he is part of the group. Analytically oriented therapy, on the other hand, emphasizes the importance of the *individual* by encouraging the patient to reflect upon himself, to be aware of personal feelings, to delve into his unconscious mind. This concentration on the self would ill prepare the psychiatric patient for his return to his role in the Soviet group, a role which disparages his individualism.

Since Soviet psychiatry is physiologically oriented, one might correctly expect that organic therapies are utilized extensively. Sleep therapy is widely used. The rationale for this therapy is based on Pavlov's concepts of "protective inhibition" a concept which proposes that when nervous activity is suspended in a certain manner, it has definite restorative effects on neurogenic functions. The Klaese type sleep therapy is not used. The technique used at the Central Institute of Psychiatry produces 16-18 hours of sleep per day by administering 0.1-1.0 gram of sodium amytal. During the remaining 6-8 hours the patient is awake, takes nourishment and receives psychotherapy.

This is repeated for 10-15 days. In some instances the technique is combined with other therapies. For example, it may be used on alternate days with insulin coma. I was told of an "electro-narcosis" technique which produced "physiological sleep." I did not see it in operation.

Insulin coma is extensively used in the treatment of schizophrenia. A full series of treatments consists of 10-15 comas. Electroshock therapy is still in use, but allegedly only in rare instances. Psychosurgical procedures were banned in 1950 as being "unphysiologic and contrary to Pavlovian concepts of protective inhibition."

The tranquilizing drugs such as chlorpromazine (known in the U.S.S.R. as Amazine) and Rauwolfia Serpentina are widely used but not as extensively as in the Americas. The dosages are in general far less than used here.

An amphetamine (called Phenamine) is also commonly used. Caffeine, given intravenously, in combination with sodium amytal is used at times in catatonic stupor. It is theorized that the "amytal causes a physiologic release by the subcortex, while the caffeine acts as a cortical stimulant."

The inhalation of an 80% nitrous oxide-20% oxygen mixture is recommended in some cases of schizophrenia, depression or paranoid states. It is administered for 5-20 minutes on 3 consecutive days.

Hypnotic therapy which was once claimed to have "useful restorative and sedative functions" has lost favor and is now rarely used.

PSYCHIATRIC RESEARCH TRENDS

Soviet psychiatry, as with all branches of Soviet medicine, has been dominated by the figure of Pavlov. This has been particularly so since the centennial celebration of his birth, in 1949. Since that time there has been a marked reaccentuation of his concepts and methodology. In line with this, neuropsychiatric research has concentrated to a great extent on the study of highest nervous activity (conditioned reflexes), the effects of visceral function on cortical activity and vice versa, the study of principles of "protective inhibition" through various types of sleep therapy; the study of the genetics and ontogenesis of highest nervous activity.

In the pursuit of these studies there appears to be a close cooperation between psychiatrists, neurologists, physiologists, anatomists, biochemists, geneticists, etc., working in multi-disciplinary teams in large research institutes such as the Central Institute of Psychiatry of the Ministry of Health, U.S.S.R., (Director: Professor D. D. Phetotov); Moscow Brain Institute of the Academy of Medical Sciences, (Director: Academician S. Sarkisov); Pavlov Institute of the Academy of Sciences, (Director: Academician K. M. Bykov) to name three.

The following are a few illustrative experiments: 1. In the laboratory of the Ontogenesis of Highest Nervous Activity in the Pavlov Institute of Physiology, Professor Troshekin has been studying the development of the nervous system under different environmental conditions. Alterations in conditioned reflexes are used as the objective measurement of change. One series of experiments appeared to have interesting psychiatric application. It was designed to reveal, when the "reflex of fear" or "reflex of passive defense" would first appear in puppies. They had previously determined that the "awareness reflex" (the puppy's first reaction to his environment with curiosity) appeared, when the dogs were approximately one month old. They took a number of dogs, about one month of age, and divided them into different groups of which I will mention two.

Group A—was exposed to 90 decibel sounds and was fed at the same time.

Group B—was exposed to 90 decibel sounds and at the same time to pain produced by a 40 volt electrical shock.

In Group B, where initial awareness was associated with pain, the dogs quickly became afraid of the experimenters. They then became afraid of any and all moving objects. The reaction to objects became so strong they would lose control of their sphincters, lost weight and developed alopecia. These animals who were repeatedly frightened during the period of initial awareness have remained frightened in all situations after 2½ years of observation in spite of attempts at corrective environmental change. Animals in Group A who were exposed to sound plus food reacted with normal curiosity to their environment and did not show the fear response.

In a second series of experiments, they took dogs 3 months of age and exposed them to the same studies. They found that they could produce the fear response in these dogs but gradually the fear response disappeared.

In a third series of experiments they found, in dogs who had been irrevocably frightened at one month of age, they could produce only one conditioned reflex at a time, even if the animal was tested a year or more after the initial traumatizing experiments. If they tried to establish another, the first was inhibited. In animals who were not frightened, new conditioned reflexes could readily be established without inhibiting the first.

Another interesting bit of work that may seemingly be of importance to psychiatry is the study of the so-called "second signal system" as stimuli in the production of conditioned reflexes. The term "second signal system" requires some explanation. Stimuli such as sounds, rhythms, lights, etc., are what may be called "first or primary signal systems" which can be used in producing conditioned reflexes in animals as low in the evolutionary scale as goldfish. The "second signal system" involves the use of the "meaning of words or language" and therefore this can only be studied in man. Much of the work in the "second signal system" is going on in the Laboratories of Interoceptic Conditioned Reflexes of the Pavlov Institute of Physiology under the direction of Academician Bykov and Professor Airapetianz.

They described to me in great detail, experiments in humans in which the "second signal system" was used to establish "cortical control over normal and abnormal functions of the bladder, stomach, skin, etc., by means of conditioned reflexes." For example, they described experiments in patients with proven peptic ulcers in whom mass gastric contractions caused pain. By establishing a conditioned reflex in which the pain producing contractions were associated with a specific number, they report that they were able to prevent the occurrence of the painful contractions and thereby enhance ulcer healing.

Bykov asserts that they have shown, in laboratory animals and in man, that cortical control over all visceral organs is possible. He states that there is a very active reciprocal, functional relationship between the viscera and the higher cerebral centers "being carried on by means of complexed humoral and neuro-humoral mechanisms" some of which, he states have been identified. Bykov expressed the belief, that through further studies of the second signal system and of cortical-visceral relationships they will contribute to the knowledge of the origin of normal and abnormal emotional behavior.

COMMENTS

This report represents a limited survey of some of the leading psychiatric and neurophysiological institutions in the U.S.S.R. It does not offer any first hand observations of how psychiatry is practiced in other urban mental institutions, and particularly it does not include any information about the level of psychiatric care in the more remote eastern constituent republics within the Soviet Union. Other recent medical visitors to the U.S.S.R. from Canada(1) and the United States(2) were impressed by the caliber of the leaders of Soviet medicine and by the high quality and originality of some of their work. My impressions are in general agreement with those expressed in these previous reports.

It must be stressed once again that psychiatric organization and practice in the Soviet Union differ radically from that in the United States and Western Europe. Psychotherapeutic orientation is particularly at odds with our concepts. The figure of Pavlov dominates psychiatric research as it does all of Soviet medicine. As such, the conditioned reflex is used as the measure of objectivity in most research evaluation. An extended period of observation by many western psychiatrists, neurologists and neurophysiologists will be necessary in order to obtain a more complete picture of Russian neuropsychiatry.

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PSYCHIATRY AND HIGHER EDUCATION IN FINLAND[1]

KAUKO KAILA, M.D.[2]

Some 15,000 students (about 3.5 per thousand of the total population of over 4.3 millions) are studying at the various universities and colleges in Finland. The majority of the students, 13,000, are studying in Helsinki, the capital. Almost 40% are women. Twenty-five percent of all students at the university and colleges in Helsinki make use of the Student Health Service on an average of twice a year. Three percent of them are referred to the psychiatrist, the average number of visits of each patient being 4. About 2% of all students consult the psychiatrist during their years at Helsinki University, an extremely low percentage.

According to a noteworthy Committee Report(1), 10% of American students ask for psychiatric assistance, if it is easily available. According to R. W. Kohl (Cornell University)(2), 25% of the medical students seek psychiatric aid or advice, when the psychiatrist is their teacher as well as their therapist, and about one-half of them require actual psychotherapeutic treatment.

The present material consists of 203 students, who have consulted the psychiatrist (about 40 of those referred failed to come); some of these 203 proved to be non-psychiatric cases, others again averse to therapy or otherwise "impossible," so that the number of those psychotherapeutically treated was reduced to 164. In judging the representativeness of this material, it must be taken into account that violent psychoses were immediately sent to mental hospitals.

As an object of research such a group of thoroughly examined young people is most valuable and interesting. This kind of research material is uniform in that it is composed of young people living under similar external pressure in that important period of life when they should emancipate themselves from home and parents, become independent and socially adjusted. It is this age group that contains one of the peaks of psychic disorders. It can further be said that, for several reasons, university studies constitute one of the most effective and rigorous tests of both intellectual and emotional maturity.

Ability to study, i.e., continued academic performance, is a very significant and obvious gauge of emotional maturity and mental health in students. The sensitiveness of this gauge is shown, by the fact that many students who are unable to study are well able to earn their living by doing intellectual work, *i.e.,* inability to work in the case of the student is his inability to study. In Finland an unexpectedly large number of students—for instance one-third of the entire student body at Helsinki University—"fail" in their studies and drop them. Similarly, the completion of studies may take a great many graduates several years more than expected. In general the discontinuance of studies is not due to a freshman's inconstancy, but occurs late during the third or fourth year and must be taken seriously. The percentage of discontinuance is much higher in the faculties of arts (50% in the faculty of philosophy) than in the actual professional faculties (5-15%), where the curriculum consists of systematic courses and practical work. Some previous non-psychiatric and non-medical investigations in Finland have yielded the conclusion that, as a rule, the reasons for dropping the studies are not financial, but that some kind of personality problem is of primary importance.

With regard to the *year at the university,* the patients are distributed evenly enough. More than one-third of the students examined have been *working for a living* permanently or temporarily during their years at the university; this figure corresponds approximately to the present practice in Finland.

THERAPY

The *urgency of treatment* is a significant factor in psychiatric and psychotherapeutic material. As the number of students treated

[1] This paper presents the writer's experiences as the consulting psychiatrist of the Student Health Service in Helsinki during the three-year period 1952-55.

[2] Im Walder 6, Zurich 8, Switzerland.

yearly by the writer represents only an average of 0.42% of the total, the present material naturally contains many exceptionally serious cases and an even larger number of increasingly critical situations. Almost one-half of all the cases required immediate intake; the percentage of psychoses or psychotic episodes has been about 13. In corresponding American material (1, 3, 4, 5), the frequency of urgent cases has fluctuated between 25-34% and the psychosis frequency between 2.6 and 4.5%. However, it seems to the writer that considerably stricter criteria as regards urgency have been applied in the present material.

As a rule, urgency is considered almost exclusively to be a handicap in psychotherapeutic treatment. Though the writer had to plan the treatment to occupy a few hours only in most instances, owing to various external circumstances, it was found that the pressing nature of cases and situations offered many advantages. It is partly a consequence of the reticent character of the Finnish people and their erroneous ideas about adult status that often only a real emergency and a hopeless impasse can induce a Finnish student to seek psychiatric aid and make him (and then also his parents) take a really positive attitude toward the basic conditions of psychotherapy. A good therapeutic relationship may then be established very quickly, which is an absolute necessity in short, intensive treatment of this kind.

Owing to the unusually short duration of therapy, it must be particularly emphasized that this is not an instance of "psychiatric counselling." The intention has always been to gain an insight into the real life situation of the patient and his unconscious difficulties, though of course only within the profile or on the level where these difficulties manifest themselves during the therapy of a few hours. Such profiles may look quite different in prolonged therapy. Even in brief therapy, it is naturally important for the psychiatrist to be able to gain an insight as deep as possible into the case, though it is frequently the actual conflict situation that determines and guides the psychiatric procedure. As a rule, the patient has completely misjudged his essential life situation and his more pressing conflicts. Therefore the practical measures suggested by the psychiatrist involve very great external changes (*e.g.*, leaving home, changing one's career, temporarily giving up studying, etc.). This implies that the patient himself has to see the basis and background of the suggested measures in broad outlines at least; otherwise he will naturally not be able to follow the advice. It is therefore often necessary to interpret to the patient at least those unconscious difficulties, on which the practical advice of the psychiatrist is based, and it is this very part of the therapy that has to be carried out with utmost care and discretion, as it often forms the nucleus of the entire treatment, and if successful may bring about fundamental changes in the patient's life.

The experience gathered in the rapid treatment of the first 100 students will be of great benefit to the following 100, as the therapist can then very quickly distinguish many subtle disproportions in the patient's life. These disproportions again can often be accounted for only by latent personal problems, of which they are symptomatic. For instance, the estimation of real intellectual potentialities in a student becomes easier and more complete with increasing experience, so that different tests are rarely of any use later on.

In about half of the cases the *duration* of *therapy* has been 3 hours or less, which has usually included 3-5 visits. Only 12% of the patients have had more than 10 hours of therapy; 8 patients within this group were psychotics. The former number of therapeutic hours is nearly the same as the one in the American material of Fry (5), while the latter is much lower. The small number of patients who had prolonged treatment shows that therapy, even in the case of psychoses, was of necessity reduced to a bare minimum; this often involved contact with the closest relatives and friends of the patient. Seven students had to be sent to a mental hospital; in 24 cases the therapist had discussions with relatives, friends, teachers, employers, etc.

Practical solutions and external changes were frequently undertaken, though the general tendency was to avoid such directive activity during psychotherapy. In the writer's opinion, unnecessary passivity and harm-

ful caution in this respect are often observed particularly in those psychiatric circles where analytic treatment is considered a rule in more difficult cases. If circumstances do not allow prolonged therapy, it seems better to give advice than to leave the patient in a continued state of distress. Relying on a good relationship and knowing the patient sufficiently well, the therapist must assume responsibility for certain essential solutions, even urge the patient to take them, if there is no time to wait for these soluions to mature in him—or to wait for him to mature. The practical solutions, which have been considered, have naturally been varied. The most important and frequent suggestion made by the writer was that the patient should emancipate himself externally from his childhood home and parents to as great an extent as possible, associate actively with young people of his own age and seek different forms of independent living (see below: special circumstances in Finland in this respect). In about one-fourth of the cases it was suggested that the student should considerably change his schedule of studies, go over to another faculty, or drop his studies altogether.

The disturbance of studies, or the degree of inability to study, has already been touched upon. The studies of about 64% of students within this group were seriously disturbed when they came for treatment, while it can be said with certainty that the studies of only 21% had not suffered (many of them were "overgifted"). The studies of more than one-third of the patients had been seriously disturbed at least for one term. Nearly 20% of the cases seemed to be hopeless as regards the passing of the final examination, and some of these, following the therapist's advice had discontinued their studies already during therapy. However, at least 4 of these "hopeless" cases later went in for actual psychoanalytic treatment, which has restored the ability to study to 3 of them.

No attempt has been made to set *descriptive diagnoses,* since it is of no use, sometimes rather the contrary. The lives of most patients, as well as their illnesses, were in a stage of vaguely taking shape; various possibilities of development were open or possible, and the therapeutic process and the changes connected with it frequently constituted a significant turning-point. The purpose of the following "diagnostic" classification is to focus attention mainly on the patient's life situation and most essential difficulties, and often also on the leading principles of some therapeutic solutions.

Intellectual difficulties and limitations have not played a particularly important role in the lives of the students who have consulted the psychiatrist, as was to be expected; they have been essentially significant in a few cases only. In 34 cases the intellectual limitations have been a significant factor in the troubles and difficulties of those examined; 6 students were absolutely unable to take their degrees because of their limited intelligence. It is a noteworthy fact that these 6, as well as most of the other 28, were not aware of their intellectual difficulties. This has usually been due to a strong effective repression (coupled with a certain talent while at school); the intellectual limitations have been carefully dismissed from consciousness as being a painful problem, sometimes the most essential one. Behind this repression one usually finds a strong compensatory ambition and farther back, rather often—ambitious parents. Two of the said 6 students had already drifted into a psychosis after having spent many futile years at the college.

On the other hand, the intellectual difficulties of the other 28 students within this group were not insuperable, as regards the proposed goal of study; they had, however, marked emotional difficulties in addition. It may be said of several of them that if they had been somewhat less entangled in their intellectual and emotional difficulties, their studies might have progressed in a relatively normal way; possibly they would not have consulted the psychiatrist at all.

EMOTIONAL DIFFICULTIES

Retarded and warped emotional growth and maturation have proved to be the basic and most important problem of the present group of students, as was to be expected. This has been the case also with American students (5, 6). The difficulties of at least 112 students of this group were found to be

disturbances in emotional growth. There has been a wide variety of clinical pictures, among others a few psychoses and some serious psychopathic cases or character neuroses, in which the personality was already so badly warped that only actual psychoanalytic treatment might have been expected to bring about greater improvement. However, most of these 112 have been young people whom it has been possible to help and guide to a gratifyingly high degree in what has often constituted the first—perhaps even the most important—crisis in their lives.

As regards the national character of the Finnish people, it may be said that psychoinfantilism is common, yet frequently all the more strongly disguised, since childishness in adults is held in contempt and finding it in oneself is feared. This applies particularly to men, who for fear of their childishness being discovered and in their efforts to disguise it, often condemn also such qualities characteristic of a mature adult as spontaneity, modesty, tolerance, respect for other people, feeling of solidarity, and normal interdependence. There is very little spontaneous talking among people. (Proverb: Speech is silver, silence is gold.)

As distinguished from the groups listed below, the only heading for the difficulties and disorders in 53 cases is "emotional immaturity," varied as these cases otherwise are.

The basic situation of 27 students may be called *mother or father fixation;* their dependence on the parents had remained so strong and their relationship to them—usually to one of them—so close that the centre of gravity of their lives and the main part of their interests were still clearly with father and mother. Great efforts were required to persuade these young people to stay at home as little as possible, to spend their weekends and holidays elsewhere, or sometimes to move away from home. When difficulties arose, these patients often wanted first to return home just to be ill, which, of course, was the worst possible solution and "treatment."

Now it must be kept in mind that in Finland the students do not live on a campus and that external community feeling and social contacts among them are in general much slighter than in the U.S.A. Most students live in lodgings in the town or its vicinity and usually take their meals at cafés and restaurants; thus there are many whose compulsory or natural contact with their fellow-students is limited to the attendance at lectures. In this respect, the professional faculties are in a better position, with systematic theoretical and practical studies closely interwoven. Many young people with difficulties in social adjustment begin to isolate themselves to an ever increasing degree, since external conditions make it far too easy, whereas they should almost be compelled to associate with other people, thus gaining at least some kind of social "routine." In many instances, a marked change has been brought about merely by the fact that the therapist has succeeded in pointing out to the patient various noxious consequences and risks of isolation and home fixation.

Strong infantile sexuality has been the most conspicuous actual difficulty of 15 students. As a whole, this group has been emotionally much more mature than the foregoing one. In some cases one might speak of "sexual panic," which implies that a young person, not yet knowing how to dispose of a strong emotion like this, represses it downright, or curls up around it, or continues to form new intimate relations, which soon prove a failure. A very rigid conception of morals again, has rendered it impossible for some patients to gratify their need for affection in any way, while the immediate environment has greatly helped to aggravate the situation for others.

A *prolonged serious panic stituation* had led 14 students to consult the psychiatrist. This group, which included 6 psychoses, was relatively large and the most difficult one to help. By means of brief therapy, 3 of these 6 patients were considerably helped. The other 3 would probably have remained chronic cases, but 2 of them sought psychoanalytic treatment and have now decisively improved. Many of these states might, in accordance with Kempf, be termed homosexual panic within the profile provided by brief psychotherapy. There were 3 serious manifest perversions in this material: 2 homosexuals and one "classical" masochist.

Certain external dependence has interfered to a considerable extent with the studies and health of 16 students and aggravated their conflict situations. Very exceptional parents or other relatives, on whom the student has been wholly dependent financially, were usually involved; sometimes the family of the husband or wife, fiancé or fiancée, was the worst actual factor of disturbance. It is to be noted, however, that the noxious external dependence mainly drew its strength from the patient's personal peculiarities and inner dependence. On the other hand, this group contained several young people who, under different circumstances, almost certainly would have got through their college years without psychiatric aid. This material contained 4 students, whose difficulties accumulated from several very different directions or who otherwise remained too vague to the therapist.

FINANCIAL AND HOUSING DIFFICULTIES

These difficulties for students in Helsinki are exceptionally great. The housing shortage borders on a catastrophe; the rent for even quite a small spare room is very high and a great many students have to live far outside the city. Thus the problem of how to spend the free time between the lectures and practicals is hard to solve, particularly as there are very few cheap and comfortable student restaurants.

It may be said at any rate that just as often as students themselves complain that their difficulties and discontinuance of studies are due to external and financial troubles, just as seldom do these troubles prove to be fundamental causes. A reasonably balanced and independent young person seems to be able to manage his life so that he does not, for example, enter the university or college at all, if sufficient funds or other necessary qualifications are lacking. It has often happened that a student has drawn up a study schedule for 4 years, yet finds that it will require 6 years to carry it through; the funds then run out too early. In cases like this, the over-estimation of one's own potentialities and gifts has been so marked as to be ascribed only to a very exceptional emotional structure, often to compensatory, excessive lack of discrimination and ambition. The financial difficulties and various subsequent handicaps during the last college years are then of a purely secondary nature.

Summary and Conclusions

The difficulties and mental disturbances of Finnish university and college students are in most instances due to personal factors, retarded or otherwise disturbed emotional growth and maturation interwoven with family relations, and insufficient attainment of independence and adulthood. The significance of intellectual difficulties is of minor importance among the factors referred to above, since even in the cases where marked intellectual difficulties were found—*i.e.*, in about one-fifth of the total number examined and given psychotherapy—emotional disturbances proved to be the primary reason. Rather loose social ties among the students, the lack of campus life, and the reticent Finnish character favour the fatal isolation from suitable company. Finnish students live in great financial and housing difficulties, which considerably increase the already serious pressure and strain of the college years. University students are very susceptible to short intensive psychotherapy. It would be most desirable that the students should have their own (full-time) psychiatrists. The fact that an uncommonly high number of students—more than one-third of the entire student body of Helsinki University—discontinue their studies is probably in most cases due to emotional disturbances, though the students themselves provide every other possible cause for their failures.

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CLINICAL NOTES

FRACTIONATION AND QUANTITATIVE ANALYSIS OF CEREBROSPINAL FLUID CONSTITUENTS WITH REFERENCE TO NEUROPSYCHIATRIC DISORDERS

SAMUEL BOGOCH, M.D.[1]

Although the cerebrospinal fluid is a relatively accessible part of the central nervous system, the quantitative study of its organic constituents has been hampered by their presence in high dilution. The earlier demonstration in this laboratory (2) that the total concentration of neuraminic acid in the C.S.F. of schizophrenic patients is lower than that of non-schizophrenic subjects and comparable only to the values found in some children under the age of seven, which has now been extended to a series of 250 cases, made it desirable that the distribution of neuraminic acid between macro- and micromolecular species be determined. The present report [2] briefly outlines methods which have been developed for the determination of the various carbohydrate and protein substances in individual specimens of cerebrospinal fluid, and presents further evidence of an abnormality in C.S.F. fluid neuraminic acid content in schizophrenic patients.

Seventy-six individual specimens of C.S.F. fluid, obtained in routine diagnostic and anesthetic lumbar punctures in a variety of both nervous and non-nervous disorders as well as in normal subjects, were analyzed within 4 hours for protein, glucose, cellular content, and dry weight, and the total neuraminic acid content was determined. The individual sample (30-50 cc.) was then lyophilized, the dried material weighed, taken up by several washings in a total of 5 cc. of glass-distilled water, and dialyzed quantitatively at 4° C against 10 cc. of water through cellophane (from which all water-soluble contaminants had been quantitatively removed by prior washings with distilled water). The outside water was changed at alternating 9- and 15-hour intervals until no further diffusible material was obtained. This was almost always (in 75/76 cases) achieved by the 10th change, the total 11th diffusate containing less than 1 mg. dry weight. The combined diffusates were made up to an exact volume (usually 100 cc.) and designated the diffusate. Ten cc. of the diffusate was used for analysis, the balance lyophilized and stored for further study. The non-dialyzable material was quantitatively transferred with three 0.5 cc. water washings to a volumetric flask and the volume made up to 10 cc. with water (whole non-dialyzable). The whole non-dialyzable and the diffusate fractions were both quantitatively analyzed in terms of dry weight, as well as nitrogen, phosphorus, neuraminic acid, hexosamine, and hexose content, and in addition, the reducing sugar of the diffusate was determined. Table 1 summarizes the overall range and mean of values. If only between 15 and 30 cc. of spinal fluid was available, an abbreviated analysis was performed. Thus, the lyophilized cerebrospinal fluid was weighed, taken up in a total of 3 cc. of water, and dialyzed against 6 cc. aliquots of water to completion. The total non-dialyzable fraction was made up to 5 cc., permitting only the dry weight, neuraminic acid and hexosamine to be determined. The diffusate fraction was made up to 60 cc., a 10 cc. aliquote used for a full analysis, and the balance lyophilized.

The recovery in terms of dry weight showed a mean value of 99.0%, with one-half of the values falling within ±6.0% and the balance falling within ±13.0%. The whole non-dialyzable neuraminic acid accounted for between 16.7 and 59.2% of the

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[2] This work has been supported in part by a grant from the U.S. Public Health Service (B1-221). Mr. Peter C. Belvel gave excellent assistance.

TABLE 1

Non-dialyzable fraction	Whole Non-dialyzable Range	Whole Non-dialyzable Mean	Fraction G Range	Fraction G Mean
Dry weight, (as mg./cc. whole CSF)	0.18- 0.99	0.463	0.084- 1.04	0.406
% Nitrogen	11.3 -17.0	13.4	11.7 -20.8	15.2
% Phosphorus	0.05- 1.27	0.30	0.06 - 1.27	0.50
% Neuraminic acid	1.3 - 5.2	3.05	0.79 - 4.86	2.12
% Hexosamine (as galactosamine)	0.6 - 3.7	1.7	0.72 - 5.25	2.70
% Hexose (as glucose)	1.5 -10.4	5.5	0.80 -13.4	5.9

Diffusate fraction	Range	Mean
Dry weight, (as mg./cc. whole CSF)	7.4 -13.9	9.24
% Nitrogen	0.23- 3.71	1.23
% Phosphorus	0.01- 0.60	0.12
% Neuraminic acid	0.06- 1.00	0.45
% Hexose (as glucose)	1.85-20.0	7.51
% Reducing sugar (as glucose)	2.0 -17.9	8.00

total neuraminic acid (mean 32.6%), the balance being diffusible. Since hexosamine was absent from the total diffusate, the diffusible neuraminic acid could not have been conjugated with a hexosamine.

The whole non-dialyzable fraction always contained a slight to moderate amount of poorly soluble material. If this fraction was centrifuged at 2000 r.p.m for 5 minutes, a clear supernatant and a small white precipitate could be easily separated. The clear supernatant (Fraction G) was found to differ in its analysis from that of the whole non-dialyzable fraction (Table I). In 5 individual specimens, the major component of Fraction G contained nitrogen 16.7% (±1.7%), neuraminic acid 3.0% (±0.6%), hexosamine 4.0% (±0.7%) and hexose 9.3% (±0.35%). Further purification of Fraction G is in progress. The contribution to the total neuraminic acid of the original cerebrospinal fluid which is made by Fraction G (GNA) was found to be 0.6 to 22.0 micrograms per cc. C.S.F. fluid.

While the neuraminic acid content of the whole non-dialyzable fraction bore no constant relationship to the value for the total neuraminic acid of the C.S.F. fluid, GNA was found to parallel closely the total neuraminic acid; the higher the value for total neuraminic acid in the C.S.F. fluid, the higher the value of GNA. Schizophrenic subjects (18 out of 19) showed GNA values below 9.5 micrograms (1.8 to 9.3; mean 6.7). Three children under 7 years of age also showed GNA values below 9.5 micrograms. On the other hand, children over 7 and non-schizophrenic adults (in 10 out of 13 cases) showed GNA values above 9.5 micrograms (9.6 to 22.0; mean 12.6). It may be noted that each of the non-schizophrenic adults who had a GNA value below 9.5 had a brain neoplasm.

The findings on Fraction G provide a second independent measurement which correlates well with the measurement of total neuraminic acid in C.S.F. fluid, and supports the finding (1) that there is an abnormality in the neuraminic acid-containing substances of the C.S.F. fluid of schizophrenic patients. Related studies in this laboratory (2-5) which deal with the structure and function of the neuraminic acid-containing brain gangliosides are pertinent in this regard, since membrane transport and receptor functions are suggested.

The quantitative analysis of individual specimens in terms of protein and carbohydrate constituents has provided considerable information which will be discussed in detail elsewhere. The relatively gentle fractionation here presented permits, in addition to the analysis of individual specimens, the further detailed study of pooled subfractions, with the assurance that no major component is neglected in either case.

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A NEW NASO-PHARYNGEAL AIRWAY FOR USE WITH CEREBRAL ELECTRO-CONVULSIVE THERAPY

JOSEPH EPSTEIN, M. D.[1]

The satisfactory end point of an electro-convulsive treatment is the return of normal respiration plus the other vital signs. Standard auxiliary equipment in connection with ECT apparatus is an airway to facilitate respiration at any time required. The difficulty in the resumption of respiration following the convulsive seizure is frequently mechanical. By mechanical, we mean an obstruction to the passage of air due to increased or decreased tonus of the tissues or structures of the nose, mouth, pharynx or larynx. This is often noted in elderly edentulous patients when, during and following the convulsion, their nostrils seem to collapse over the upper lip and the mouth is tightly closed. In such cases, the insertion of an airway prevents hypoxia and cyanosis which usually develop before the nares become patent or the mouth opens. Another example is the tendency of the tongue to fall back and interfere with the passage of air. When the patient either doesn't get enough air or isn't breathing at all and shows a corresponding degree of cyanosis, the insertion of an airway is indicated. The airway also permits the application of oxygen should it be required.

The airways in almost universal use at present are the oral type which are inserted through the mouth. The oral route of insertion is frequently difficult. Those of us who have had occasion to insert an oral airway at the end of a convulsion have from time to time experienced great difficulty in prying open the jaw, only to find the teeth almost impossible to separate and on forcing in the airway, injury has been done to the teeth or tissues of the tongue or mouth. In clinics where succinyl choline is used it makes it increasingly important to have proper airways so that oxygen can be administered without delay.

We are about to describe a nasal airway which has all the advantage of the oral type and apparently none of its disadvantages. It is a curved, flexible, synthetic naso-pharyngeal airway which is 6 inches long and which can easily be inserted in either one or both nostrils, at any moment which one selects, either routinely before or during the convulsive seizure, or when there is any difficulty in breathing following the termination of the convulsive seizure. This airway comes in various sizes. It is open at one end and has auxiliary openings to increase the amount of air or oxygen flowing through it. The nasal end is wide and funnel shaped to ensure against its being sucked into the nostril. The tube need not be inserted to its full length, and satisfactory results may be obtained after it enters the nasopharynx—and ½ to 1 inch protrudes from the nostrils. By inserting it through the nostril, it by-passes the teeth, the tongue and hard palate without disturbing the jaw. It overcomes all the disadvantages inherent in the airways which are used through the mouth and there is no risk whatever in injuring the teeth or soft tissues. One tube is generally adequate and can be inserted into either nostril. Should there be an obstruction in one side, the other nares can be used, or one may insert two tubes. With the tube in place, the air enters the throat in the same manner as when coming through the nostrils or the oral airway. Aspiration of fluid from the nasopharynx is easily effected by applying suction through the tube. The extreme efficiency of these tubes is most easily demonstrated on any patient either during or at the end of the seizure by merely inserting the airway and hearing the free swish of the breathing back and forth through the tubes; inadequate or stertorous breathing suddenly becomes smooth and free. If the patient should be edentulous, one can be convinced of its efficiency at the termination of the convulsion by first inserting the tube, hearing the breathing and then removing it to find that instantly the breathing becomes labored and difficult through the mechanical closure of the airways in the nose. Frequently in passing the nasal tube, one can actually feel the tube passing through a posterior nasal constriction or spasm and as soon as this occurs, the respiratory air breaks through. In clinics

[1] Pinewood Psychiatric Institute, Katonah, N. Y.

where small doses of succinyl choline are used and where the jaw is not completely loose after the seizure, these airways are inserted at the termination of the seizure, and if normal breathing is delayed, oxygen can be administered at once without the necessity of prying open the mouth.

The utter simplicity of this procedure recommends itself for use. We have been using these tubes for the last 6 months in many hundreds of treatments and they have also been used with universal approval in the clinics where we have demonstrated them. We feel that they are a distinct addition to ECT accessory equipment. We no longer use the oral type airway, but keep it on our emergency tray, for a rare case where there might be bilateral nasal obstruction due to polyps or other pathology. We are therefore presenting this to the profession. These tubes have been designed for us by the Davol Rubber Company with the cooperation of Dr. William A. Gants, Director of Professional Production Department.

Actual size of naso-pharyngeal airway.

CLINICAL IMPRESSIONS OF THE RESPONSE TO PROMAZINE THERAPY

LUDWIG FINK, M.D., AND GEORGE VLAVIANOS, M.D.[1]

Promazine [2] was administered, in total daily doses of 300 mg. to 1.5 Gm. for 2 to 13 months, to 200 ward patients 22 to 70 years old. Diagnoses included paranoid, hebephrenic, catatonic or simple schizophrenia (152 patients); manic-depressive psychosis (4 patients), psychoneurosis (7 patients), psychosis with mental deficiency (5 patients), and psychosis resulting from alcoholism (32 patients). Classification of the patient, however, was based on the prevailing symptoms: 1. violence, overactivity and insomnia. 2. anxiety, tension and irritability. 3. antagonism, hostility and paranoid ideation. 4. nonviolent hallucinations and delusions. 5. withdrawal, but mentality and adaptability apparently still preserved. 6. negativism, catatonia. 7. nonviolent or moderate deterioration with impoverishment of initiative. 8. severe deterioration with deep regression, wetting and soiling.

All had been ill 1 to 15 years. Twenty-two had been repeatedly treated unsuccessfully with electro or insulin shock, or had received psychosurgery; other ataraxics had been used for 41 without improvement.

Optimal dosage with promazine was determined cautiously by individual trial, with adjustment and change in route of administration as indicated. The violently disturbed received 100 or 200 mg. intravenously, twice daily for 3 to 6 days; others, 50 mg. intramuscularly twice a day for 3 days. On control of behavior abnormalities, medication

[1] Kings Park State Hosp., Kings Park, L. I., New York.

[2] Promazine hydrochloride is available as Sparine from Wyeth Laboratories.

was continued by mouth in doses of 100 to 500 mg. three times daily. Blood counts, serum bilirubin and serum alkaline phosphatase tests were performed at the start and at about monthly intervals throughout treatment.

Since no precise methods exist for screening the effects of the ataraxics in the human, conclusions were based, *not on statistical calculations,* but on evaluation of the clinical responses obtained.

Promazine medication: 1. Reduced violence, combativeness and overactivity; and alleviated insomnia, even in the aged and arteriosclerotic. 2. Controlled anxiety, irritability and emotional tension in interpersonal relationships. 3. Acute hallucinations and delusions usually were relieved in a few days; fixed paranoid delusional ideation, however, generally remained unaffected. Patient with distortions in sense perception of fairly recent onset showed improvement earlier than did those in the more chronic cases (two years duration or more). 4. Withdrawn but intellectually preserved patients became less constrained and capable of freer verbalization. 5. The negativistic and catatonic occasionally exhibited progress. 6. Deeply regressed, severely disturbed or vegetative patients also showed some improvement, particularly in bladder and bowel control. 7. Capacity for readjustment was seldom increased in the nonviolent or moderately deteriorated with impoverishment of initiative; apathy and defectiveness in judgment were little altered. 8. All tended to relapse or regress soon after medication was stopped or reduced.

About 19% (37 patients) have been released; only 2 (alcoholics) have returned in the subsequent 3 to 10 months. About 21% (41 patients) have shown such sustained improvement that they have been transferred to open wards, received maximum privileges and been assigned to work. One third of this group (14 patients) now receive no medication; the rest are maintained on 100 to 300 mg. daily. Of the total series, 3% (6 patients) regressed after initial improvement on 1.5 mg. daily; later, 4 of these improved and tolerated reduction of daily dosage to 600 mg.

No convulsions or other untoward effects have developed, and no signs of habituation, even in the alcoholics.

Promazine significantly alleviates the secondary symptoms of the psychoses and permits greater amenability to psychotherapy. A larger percentage of the chronically psychotic are showing improvement; there is less destructiveness and need of mechanical restraint. A protective environment is still necessary, however, in advanced cases. Further experience is required to determine the long term stability and capacity for adjustment of ataraxic-treated out patients.

ELECTROSHOCK TECHNIQUE

DAVID R. HAWKINS, M.D.[1]

The continuous publication of articles describing ECT procedures indicates that there is constant interest in evolving the simplest and safest technique for administering a treatment which has been widely used for over 20 years. The author wishes to describe an ECT technique which has resulted in no clinically observable complications in over 3,000 treatments, and which seems applicable in either hospital or office practice for the routine patient.

One tablet of Meprobamate is given to the patient one hour before treatment to reduce pre-shock fear and post-shock excitement or confusion. After the electrodes are in place, 15 to 25 mg. of succinylcholine is rapidly injected. The dosage varies with the patient's weight and response to the initial trial dose of 15 mg. After approximately 25 to 30 seconds the patient begins to show muscular fasciculations and early respiratory discomfort and, at this specific point, the grand mal stimulus is applied. In this way the patient recalls no discomfort nor is there a necessity for administering oxygen or other respiratory assistance. The convulsion which ensues is sufficiently attenuated to eliminate fractures as only ½ to

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½ reduction of muscular power is required to achieve that end. The therapist keeps the patient's jaw closed during the convulsion. No one else is allowed to touch the patient, and no other restraining measures are employed as the application of extrinsic force to a dynamically balanced musculo-skeletal system of forces is unnecessary and may cause a fracture. The rationale is revealed by a study of the statics and dynamics involved in the action of muscle-powered levers acting at varying angles across joints. Oxygen is occasionally used during the post-convulsive period of apnoea, but other adjuvant measures are not employed.

The entire treatment is given by the therapist himself, so that an assistant stands by primarily as a precautionary measure. The use of a petit mal shock as an anesthetic to cover the unpleasant subjective effect of the muscular paralysis (as suggested by Impastato) has resulted in a few unexpected grand mal seizures in patients with a low convulsive threshold. The latter technic, however, is valuable when a greater degree of muscular relaxation is required than is necessary with the routine patient.

It appears that succinylcholine may be used routinely with relative impunity if it is utilized to achieve only that partial degree of muscular paralysis necessary to eliminate fractures and reduce the cardio-vascular stress inherent in unmodified grand mal convulsions. Experience with the above method indicates that the use of adjuvant drugs and other ancillary measures can be safely eliminated.

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FURTHER EXPERIENCES WITH ELECTROSHOCK THERAPY MODIFIED BY ANECTINE®

CHARLES SALTZMAN, M. D., WILLIAM KONIKOV, M. D., AND RUTH P. RELYEA, R. N.[1]

We have previously reported our experiences in the use of Anectine in 7,500 electroshock treatments(1). At that time we reported no fatalities, no fractures, and no serious medical complications. Subsequently, we reported on 17,000 treatments with no complications(2). At Bournewood and Valleyhead hospitals the staff and visiting psychiatrists have continued the routine use of an intravenous barbiturate, Anectine, and oxygen using essentially the same technique, and we can now report on 38,000 treatments. In this series there have been no fractures, no fatalities, and no serious medical complications.

The technique can be described briefly. A nurse anesthetist assists at all treatments. The patients are without breakfast and are given atropine 1/75 gr. ½ hour before treatment. At the time of the treatment dentures are removed, the patient lies on an ordinary bed with a flat pillow under the head. About 10 cc. of an intravenous barbiturate, 2% solution, is administered, then 40 to 80 mgs. of Anectine is given rapidly. Oxygen under positive pressure is started immediately. The electric shock is given approximately 60 seconds following the Anectine. Oxygen is continued throughout the seizure and following the seizure until normal respiration is established. The patient is then turned on his side with sideboards on the bed.

Various authors(3, 4, 5, 6), while advocating modified treatment, have criticized the use of intravenous barbiturates and have also used only minimal doses of Anectine. They are apparently concerned about laryngeal spasm and apnoea. We can only point out that in 38,000 treatments using intravenous barbiturates and adequate doses of Anectine we have had no laryngeal spasm and no serious complications. We, of course, realize that laryngeal spasm can occur, and that there can be mechanical obstruction due to a large tongue or increased moisture, and

®Anectine is Burroughs Wellcome brand of succinylcholine chloride.

[1] Bournewood, 300 South St., Brookline, Mass.

therefore, do state that there be an individual trained in anesthetic procedures assisting at the treatment at all times. The authors of this paper fully agree with S. V. Marshall(7) of Australia in his criticism of American Psychiatry on this score, and suggest that his letter be read by all interested in this problem.

We have encountered occasional patients who are sensitive to barbiturates as manifested by a rash or by post-treatment excitement. In these patients we have used nitrous oxide for anesthesia instead of barbiturates with satisfactory results.

On two occasions we have had to discontinue EST because of untoward reactions. The first patient was a 50-year-old woman with a history of a previous coronary episode. Immediately following the eighth treatment she showed evidence of moderate pulmonary edema as manifested by dyspnea and moist basal rales. She recovered with no residual affects, but no further EST was given. The second patient was a 69-year-old man who had some vascular collapse and remained apnoeic and somewhat cyanotic for an hour following treatment despite oxygen being administered with a patent airway. He, however, recovered uneventfully, but no further EST was given.

In summary, we have now given 38,000 treatments using an intravenous barbiturate and adequate doses of Anectine with no fractures or any other orthopedic complications, and no fatalities, and with no serious medical complications. The average dose of Anectine has been 60 mg. Oxygen under positive pressure, administered by a nurse anesthetist, is used in every treatment. We believe that this method of treatment, when administered by trained personnel, is safe and should be used routinely.

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DARTAL: A CLINICAL APPRAISAL

FRANK P. MATHEWS, M.D.[1]

In 1956, Hambourger, Hemmer and Calhoun(1), of the G. D. Searle and Company, conducted a study on dogs of the comparative tranquilizing properties of chlorpromazine, and 8 related compounds. These latter had been synthesized by Cusic, Hamilton, and Lourie, of the same organization. Miosis, relaxation of nictitating membrane, and development of ataxia were objective criteria of full drug effect. The most active compound thus revealed was thiopropazate, 1-(2-acetoxyethyl)-4-13-(2-chloro-10-phenothiazine) propyl 1 piperazine dihydrochloride. Routine toxicity studies on various test animals indicated that clinical trials on human beings should prove to be relatively safe.

A test supply of this drug, known first as SC 7105, and now as Dartal, was given Western State Hospital in July 1956, for clinical trial. Not knowing just what effects to expect, the drug was tried at random on a rather wide diagnostic spectrum, first in the male and female hospital wards, later on reception, psychiatric active treatment, and "back" wards. The following rough appraisal of its symptomatic therapeutic effects in 117 cases was arrived at after at least a week of administration of the drug; no other specific psychiatric treatment is included in this series, save general hospital routine. Opinion of at least 2 psychiatrically trained observers forms the basis for conclusions regarding therapeutic effect. Fifty men and 67 women were treated, in ages ranging from 13 to 92. Minimum observed time on drug, 8 days; maximum, 14 months; dosage range

[1] Western State Hospital, Fort Steilacoom, Wash.

from 20 to 160 mg. daily, (40 mg. average, in 4 doses). All dosage was oral.

Diagnosis	Clinical Appraisal of Results: Improved	Unimproved	Worse
Acute schizophrenia			
Paranoid type	3	—	—
Catatonic type	4	—	—
Undifferentiated	5	—	—
Schizo-affective type	1	—	—
Chronic schizophrenia			
Paranoid type	2	4	—
Catatonic type	1	1	—
Hebephrenic type	2	—	—
Undifferentiated	4	1	—
Manic-depressive psychoses			
Manic phase	13	1	—
Depressive phase	2	1	—
Involutional psychoses	2	2	—
Psychosis with syphilis			
Meningo-encephalitis (paresis)	5	—	—
Psychosis:			
1. Due to alcohol	5	1	—
2. Due to barbiturate addiction	7	1	—
3. With cerebral arteriosclerosis	16	1	—
4. With other disturbances of circulation:			
a. Congestive heart failure	4	—	—
b. Myocardial infarction	3	—	—
c. Rheumatic heart disease	2	—	—
d. Interventricular septal defect	1	—	—
e. Multiple CVA	—	—	1
5. Due to epilepsy	—	1	—
6. Due to Huntington's chorea	9	1	—
7. Due to cardiospasm	1	—	—
Senile psychosis	5	1	—
Psychosis with psychopathic personality	—	—	1
Psychoneurosis with anxiety state	—	1	1
Total	97	17	3

At first glance at this table, it would appear that Dartal had indications almost identical with those of the other phenothiazine tranquilizers. However, one special action stands out, that of promoting a marked suppression of the involuntary muscular activity in 10 of 11 cases of Huntington's chorea. Pre- and post-treatment motion pictures in 8 of these cases clearly demonstrate this effect.

Many more patients have been treated by Dartal at this hospital than are included in this survey. In 19 months, 384,000 mg. have been consumed by an estimated 170 patients. No allergic rashes, no hypotensive reactions, no jaundice, and no agranulocytosis have been observed. A pseudo-Parkinsonism can be produced in almost any patient, if the dose is pushed beyond a certain point, usually 80 mg. per day. This symptom particularly affected the muscles of the face, causing drooling in several patients. Sternal marrow biopsies were secured on 12 patients after 4 to 6 weeks of treatment (40 mg. per day), and submitted to Dr. Q. B. De Marsh of Seattle for study; no evidence of marrow function impairment was found. Before and after treatment electroencephalograms were run on one schizophrenic and two normal controls. Dr. M. E. Kennard reports the only changes in these tracings were non-specific ones associated with general muscle relaxation on the drug. Nine diabetics, 7 severe cardiacs, 2 cirrhotics, and 2 cases of active chlorpromazine jaundice were treated with Dartal, with no evidence of exacerbation of the organic disease. Four deaths occurred among the 117 observed cases, while being treated. Autopsies on 2 of these (both cardiac deaths) are reported by Dr. J. A. Sheppard to show no gross or microscopic evidence of liver, kidney or bone marrow intoxication.

As compared with chlorpromazine, Dartal has the following characteristics: 1. its effective tranquilizing dose, weight for weight, for human beings, is about one-third; 2. it has a narrower dosage range, pseudo-Parkinsonism being more easily produced; 3. orally, its full therapeutic effect can be expected more promptly; 4. it is almost devoid of toxic effects; 5. the indications for the two drugs are almost identical; 6. Dartal seems to have a specific sedative effect in Huntington's chorea.

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IPRONIAZID (MARSILID): ITS USE IN OFFICE TREATMENT OF DEPRESSION

WILSON G. SCANLON, M. D., AND WILLIAM M. WHITE, M. D.[1]

Ayd(1) recently pointed out the complications in the use of iproniazid. The following report concerns how these complications can be reduced by employing a technique comparable to digitalization. Following "Marsilidization," iproniazid in appropriate maintenance dosages has been demonstrated to be a valuable drug in the office management of depressed patients.

Detailed records and follow-up reports were obtained on 40 patients (25 females, 15 males—ranging in age from 20 to 78) in whom depression was the prominent clinical feature. Iproniazid (with 25 mg. of Pyridoxine at each dosage to avoid previously reported neuritides resulting from excessive loss of vitamin B_6 in patients taking the drug) was administered orally in an initial dose of 50 mg. t.i.d. until distinct clinical improvement of the depression was observed, or until intolerable complications necessitated reduction. In only 3 patients (2 males [hypotension] and 1 female [dermatitis]) did side-effects preclude use of iproniazid. All 37 patients who received the drug for a month or more had improved mood, increased appetite, more energy and a sense of well being. Ayd found improvement in only 24 of the 50 patients treated with iproniazid and side effects forced discontinuance of the drug in 11 of his patients.

Before minimal effective dosage was established, 1 male experienced hyperhidrosis and sexual impotency; 5 females developed dependent edema; 1 female reacted with a generalized dermatitis prior to 3 weeks; 2 suicidal females, ages 68 and 48, required 2 and 4 ECTs respectively; and all the patients evidenced postural hypotension. Three patients (2 females and 1 male), all with vascular hypertension, developed postural hypotension of a degree that brought about loss of consciousness.

POSTURAL HYPOTENSION

Since postural hypotension is the one general side-effect demanding constant medical vigilance, the recumbent and standing blood pressure norms should be established before beginning administration of iproniazid. Blood pressure recordings should then be made at least every other day until the patient notes the prodromes of postural hypotension. Empirically, one learns to lower the dosage slowly or rapidly, the criteria being pre-treatment vascular hypertension, number of days before hypotension appears, abruptness of blood pressure decline, age, and the patient's judgment and reliability in following medical instruction.

It was also noted that prior to establishment of the minimal maintenance dosage the hazard of syncope from postural hypotension is increased with strenuous physical exertion, alcoholic beverages, heavy and hurried eating, and the ingestion of barbiturates.

Adrenalin and Ephedrine are not effective in combating the postural hypotension. Dexedrine Sulfate does act successfully as a hypertensive, and the patient should have ten 5 mg. tablets available to be used whenever syncope threatens. Thirty-five mg. of Dexedrine Sulfate in a 14-hour period were required by 1 patient to continue ambulation and avoid fainting. Dexedrine should not, however, be routinely administered with iproniazid since it may mask a developing hypotension.

HYPERHIDROSIS

Hyperhidrosis complicated 1 case. Iproniazid was continued at 100 mg. a day for 3 days after there were clear evidences of hypotension from the preceding dose of 150 mg. a day for 33 days. Increased sensitivity to heat with pruritis and hyperhidrosis persisted for 48 hours following cessation of the drug. Dexedrine Sulfate in large doses (10 to 15 mg.) did not relieve these symptoms even though it alleviated the syncope. It is assumed hyperhidrosis and pruritis indicate a high level of iproniazid in the blood and spinal fluid and thus warn of a developing hazardous hypotension.

[1] Silver Hill Foundation for the Treatment of the Psychoneuroses, New Canaan, Conn.

SEXUAL IMPOTENCY

Complete sexual impotency commenced in 1 male 2 weeks after iproniazid had been started and prior to the onset of hypotension. The impotency persisted for 2 weeks after iproniazid had been temporarily discontinued. It reappeared briefly 2 weeks after resumption of the drug at 50 mg. a day, and subsided with maintenance on 25 mg.

NEURITIS

A peripheral neuritis was observed in 1 female patient. Iproniazid therapy had been instituted elsewhere without Pyridoxine. With its addition, the neuritis disappeared.

EDEMA

Pitting edema of the lower extremities usually disappeared spontaneously with reduction of the iproniazid to a maintenance dose. Before that, Diamox meliorated the edema sufficiently to reassure the cosmetically anxious patient.

DOSAGE

1. The minimal effective maintenance dose is usually from 25 to 50 mg. a day and may be as low as 12½ mg. every second to third day. In the majority of patients, this dosage does not produce significant postural hypotension and/or other side effects.

2. It is prudent to initiate treatment with 25 mg. t.i.d. in any individual over 45 years of age who has elevated blood pressure.

3. With evidence of developing postural hypotension in an individual with a previously elevated blood pressure, the dosage should be reduced by at least one-half. Should the recumbent blood pressure recording continue to fall and show marked change with the assumption of the standing position, the drug should be discontinued until the blood pressure has returned to a level that does not produce feelings of faintness.

4. In the ambulatory office patient who is distant from medical supervision, 50 mg. of iproniazid a day is adequate as a starting dose. If, after 1 month, there is no improvement and there are no complications, the daily dose may be increased by 10 mg. every week.

5. If the patient is seen daily by the physician, 50 mg. t.i.d. initially will produce "Marsilidization" and thus hasten improvement, but annoying side-effects are more apt to occur and complicate patient management. A rare individual may have postural hypotension on a maintenance dose of 12½ mg. every 4 to 5 days.

Conclusions

1. Judicious management of the iproniazid dosage and of the patient's activities so as to prevent syncope, makes usage of the drug safer, avoids the majority of reported adverse side-effects, and still provides the blood stream and spinal fluid with a sufficient titer to produce a salutary effect on mood.

2. It is our impression that iproniazid is most effective and produces fewer side-effects in cases of uncomplicated depression.

3. The rapid and sustained response of the patients who required ECT suggests that ECT and iproniazid are synergistic.

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ENQUIRY vs. BELIEF

If it is better to travel than to arrive, it is because traveling is a constant arriving, while arrival that precludes further traveling is most easily attained by going to sleep or dying.

—John Dewey

(*Human Nature and Conduct*)

A FURTHER NOTE ON THE MECHANISM OF THE ANTIDOTAL ACTION OF SODIUM SUCCINATE IN THE MESCALINE PSYCHOSIS [1]

IAN STEVENSON, M. D.,[2] AND L. C. MOKRASCH, PH. D.[3]

INTRODUCTION

In a previous article(1) we reported confirmation of the antidotal effect of sodium succinate in the mescaline psychosis which Schueler(2) had first described. Delay, *et al.* (3) have reported that prior injections of sodium succinate protect mice from otherwise fatal injections of mescaline. Arnold and Hofmann(4) observed an antidotal action of sodium succinate against the effects of LSD-25 and Trautner(5) has also observed the antidotal action of sodium succinate in the mescaline psychosis.

In our earlier paper we left open the question of how sodium succinate exerts its antidotal action in the mescaline psychosis. We have made some additional observations which bear on this.

METHODS

During studies on the metabolism of mescaline reported fully elsewhere(6), we administered sodium succinate to 8 additional subjects in doses ranging from 14 to 25 gms. i.v. and according to the method previously described(1). Five subjects experienced the mescaline psychosis twice, receiving sodium succinate on one of the two days only. Two subjects had only one mescaline intoxication, each receiving succinate on that occasion. An eighth subject received sodium succinate one day and sodium bicarbonate in equivalent amount on his second day. A ninth subject received sodium bicarbonate one day and nothing on his second day.

During these experiments we measured: pH of the blood, amount of mescaline and trimethoxyphenylacetic acid in the blood; volume of urine; amount of mescaline and trimethoxyphenylacetic acid excreted in the urine. In a few instances we measured urinary excretion of sodium succinate. Experimental periods extended over 8 to 10 hours. Mescaline was estimated by the Zeissel method for methoxy groups(7) and succinate by a paper chromatographic method.

RESULTS

We again observed a definite, although usually rather mild and transient antidotal action of the sodium succinate on the symptoms of the mescaline intoxication. And we again noticed no shortening of the total duration of the mescaline effects.

The two subjects to whom sodium bicarbonate was administered did not notice any significant changes in their symptoms.

We found the antidotal action of sodium succinate was not accompanied by a. increased urinary excretion of mescaline after the succinate was given; b. increased breakdown of mescaline to trimethoxyphenylacetic acid; c. decreased blood levels of mescaline (compared with levels just before the administration of sodium succinate or on days on which no sodium succinate was given); d. significant changes in the volume of urine excreted after the administration of sodium succinate; e. changes in the pH of the blood after sodium succinate (although the urine did become strongly alkaline). The urinary excretion of succinate did not increase significantly after the administration of succinate in the two experiments in which this was measured.

DISCUSSION

We measured the pH of the blood in all subjects and administered sodium bicarbon-

[1] This work was supported by a grant from the Scottish Rite Schizophrenia Research Committee of the National Association for Mental Health.

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The authors gratefully acknowledge the helpful counsel of Professors Ernest Bueding and Fred Brazda of the Louisiana State University School of Medicine where this work was carried out.

ate to two subjects to test the possibility that the antidotal effect of sodium succinate is due to the production of an alkalosis. Barrett(8) found no antidotal action in barbiturate depression comparable to that of sodium succinate with the administration of comparable amounts of an alkalizing solution of racemic sodium lactate. Our failure to find changes in the blood pH or any antidotal effect from equivalent amounts of sodium bicarbonate further negates the hypothesis that the effect of sodium succinate is due to alkalosis. Likewise our failure to relate succinate effects with significant changes in urine volume makes it unlikely that the antidotal effects depend upon a diuresis, although DeBoer(9) has proposed this explanation and adduced some evidence in favor of it.

Our results also render improbable our being able to explain the sodium succinate effect as due to changes in the metabolism of mescaline, at least insofar as these are reflected in the blood and urine.

Quastel and Wheatley(10) and subsequently Schueler(2) demonstrated that succinate could act as a substrate for oxidation in nervous tissue in the presence of mescaline which depressed oxidation when glucose, lactate or pyruvate formed the substrate. Adams, *et al.*(11) have shown that sodium succinate augments the amidation of glutamic acid in patients with multiple sclerosis. Since amidation is one means by which the body disposes of ammonia, and since the breakdown of mescaline includes its deamination to trimethoxyphenylacetic acid(6), sodium succinate may conceivably contribute to the acceleration of this process.

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AEROPHOBIA

Some are as much afraid of fresh air as persons in the hydrophobia are of fresh water. I myself had formerly this prejudice, this aërophobia, as I now account it. And dreading the supposed dangerous effects of cool air, I considered it as an enemy and closed with extreme care every crevice in the rooms I inhabited. Experience has convinced me of my error. I now look upon fresh air as a friend; I even sleep with an open window. I am persuaded that no common air from without is so unwholesome as the air within a close room that has been often breathed and not changed. . . . And I find it of importance to the happiness of life, the being freed from vain terrors, especially of objects that we are every day exposed inevitably to meet with. . . . It is to be hoped that in another century or two we may all find out, that it [fresh air] is not bad even for people in health.

—Benjamin Franklin

CASE REPORTS

HIGH DOSAGE CHLORPROMAZINE THERAPY AFTER PREVIOUS AGRANULOCYTOSIS

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The following case is interesting because of the unusually high dosage of chlorpromazine administered after two previous attacks of agranulocytosis.

The patient, a 38-year-old, paranoid schizophrenic, was first hospitalized in 1942. She received insulin coma therapy in 1943, 1944 and 1945. The patient has now been continually hospitalized for 13 years and has been disturbed, resistive, dirty, aggressive, hallucinating and preoccupied. She has received electro-convulsive therapy on many occasions but showed little response.

In 1952 the patient commenced to have grand mal seizures. She had a generalized abnormal electroencephalogram. Patient was started on phenobarbital gr. 1, q.i.d.; and dilantin grs. 1½ q.i.d. which controlled the fits.

In 1954 a bilateral transorbital leucotomy was performed. In March, 1957 after receiving 400 mg. chlorpromazine daily for 3 months, she developed agranulocytosis—WBC 1,500; P—2; L—94; M—4. In January, 1956 she was again placed on chlorpromazine 50 mg. t.i.d. and 10 days later she again developed agranulocytosis—WBC 1,600; P—0; L—99; M—1. Promazine 250 mg. q.i.d. and phenothiazine hydrochloride 50 mg. q.i.d. did not help her, and in June, 1957 a pre-frontal lobotomy was performed.

After the lobotomy, patient was given promazine, increasing the dose until promazine 800 mg. q.i.d. was being given. She still could not be controlled. August 6th, 1957 she was placed on chlorpromazine 800 mg. q.i.d., increasing until, 6 weeks later, she was receiving 1,600 mg. q.i.d.—a total of 6,400 mg. daily, with phenobarbital gr. 1, q.i.d., and dilantin grs. 1½ q.i.d. Parkinsonism was relieved by kemadrin 20 mg. q.i.d., and atropine gr. 1/100 q.i.d.

She showed a marked improvement and by the beginning of November, 1957, 2 months after receiving chlorpromazine 6,400 mg. daily she was pleasant, cooperative and enjoyed social activities. She denied delusions and hallucinations and would start a conversation with the doctor or ward personnel, although she was markedly underactive. She wrote to her family twice weekly on her own initiative. Her face was still expressionless and she showed a minimal muscular rigidity. She still became annoyed at slight provocation.

TABLE 1

CHLORPROMAZINE PLASMA LEVELS

Chlorpromazine 1600 mg. qid.—9 a.m.; 1 p.m.; 5 p.m.; and 9 p.m.

Time of sampling relative to medication	Free chlorpromazine ug./ml. plasma	Bound chlorpromazine ug./ml. plasma	Total chlorpromazine ug./ml. plasma
12 hrs. after last dose previous day	3.8	1.2	5.0
1 hr. after 1st dose..	5.7	1.4	7.1
1 hr. after 2nd dose..	5.6	1.6	7.2

Blood counts, bone marrow, cephalin flocculation tests and alkaline phosphatase were all within normal limits.

On December 4, 1957 patient had a hypotensive faint following which her chlorpromazine was reduced to 1,000 mg. q.i.d. The dosage was gradually reduced and by the 21st of December she was receiving 500 mg. q.i.d. She then became more aggressive and dosage has again gradually been returned to the original dosage of 6,400 mg. a day.

SUMMARY

A case of a patient who was treated with 6,400 mg. chlorpromazine daily, in spite of two previous attacks of agranulocytosis, is presented.

ACKNOWLEGEMENT

I wish to express my thanks to Dr. Edward J. Van Loon, of Smith, Kline & French Laboratories, for performing the estimation of plasma chlorpromazine.

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MENTAL DEPRESSION ASSOCIATED WITH HYPERADRENOCORTICISM

WILLIAM E. OLSON, M. D.[1] AND GEORGE A. HIGGINS, M. D.[1]

Although there is a generally consistent clinical picture among patients with Cushing's Syndrome, not all of the various manifestations of the disease are to be found in each individual case. Indeed, as Cope *et al.* (1) point out, even the outstanding features of the syndrome are inconstant. Such a variable pattern should be anticipated when one considers the multiplicity and complexity of the steroids elaborated by the adrenal cortex. One of the least emphasized manifestations of Cushing's Syndrome is the psychological change often observed in these patients. For the most part this change consists of minor emotional disturbances, but cases have been reported in which the psychiatric symptoms reached psychotic proportions(1, 2, 3). The dangers of severe mental and emotional changes developing in patients receiving ACTH and cortisone have been documented well(3, 4, 5, 6). It seems probable, therefore, that the psychotic manifestations observed in the case here presented were the result of abnormalities in the complex pattern of adrenal steroid biochemistry, although this kind of causal relationship is difficult to prove.

This case is being reported because of the unusual clinical picture including, as it does, some of the less obvious manifestations of adrenal cortical hyperfunction without the more common overt signs of Cushing's Syndrome. Moreover, electroshock therapy seemed indicated in view of the presenting symptoms but the results from such therapy could have been disastrous. The case brings out the necessity for a thorough study of the physical condition of each patient prior to the administration of psychiatric somatic therapies in order to prevent the morbidity and the mortality which can result from such modalities of treatment. The surgical aspects of this case have been reported elsewhere(7).

A 38-year-old white male, World War II veteran, farmer and truck driver was admitted to psychiatry on September 3, 1955, because of severe mental depression and suicidal tendencies. He was tearful, sad, worrisome, self-deprecating, and he expressed a feeling of hopelessness in his general outlook. The depression was considered to be of psychotic proportions and was seriously hampering his life adjustment. He described weakness, easy fatiguability and loss of sexual power. The duration of his symptoms was approximately one year.

A review of the family history indicated that the maternal grandfather had died at a state mental hospital in 1935. The veteran's mother received electroshock therapy for depression in 1945. A paternal uncle had died by suicide.

The past personal history included an appendectomy for ruptured appendix at age 13. He graduated from high school at 16 and made better than average grades. He adjusted well to U.S. Coast Guard service for 4½ years though he relates experiencing inordinate nervousness and apprehension during routine inspections. All of his civilian employment has been at jobs well below his intellectual capabilities. He was married in 1945 and has 2 children in good health.

The general physical examination was not remarkable. He appeared to be in robust general health. He described a recent slight weight loss. None of the usual signs of Cushing's Syndrome were evident. BP 120/80.

X-ray examination of the spine preparatory to EST revealed marked generalized osteoporosis with some evidence of compression of D-7 and D-8.

Serum calcium, phosphorous and alkaline phosphatase levels were within normal limits. Urinary Sulkowitch tests revealed increased calcium excretion. The glucose tolerance curve was of a mild diabetic type. The total circulating eosinophile count was depressed to 2 per cu.mm. Urinary 17-Ketosteroid excretion levels were normal. Urinary 11-Oxysteroid excretion levels were markedly elevated, being 11 mg.; 16.2 mg. and 18.4 mg. in 24 hrs. on 3 determinations in two different laboratories. Intravenous urography with simultaneous retroperitoneal oxygen studies did not demonstrate an adrenal tumor.

Despite the absence of signs of Cushing's Syndrome, a diagnosis of hyperadrenocorticism was made and surgical exploration was recommended. Surgery was performed on December 7, 1955, using bilateral subdiaphragmatic incisions with removal of the 12th rib on each side. Both adrenals were found to be normal in size and position and with no apparent tumor. Some nodularity of the left gland was noted. A subtotal adrenalectomy was performed, with total removal of the left gland and 80% of the right gland. Weight of the left gland was 5.6 gm. and the removed portion of the right, 3.1 gm. Pathologic study was reported as showing hyperplasia without hypertrophy of the cortex and with cortical nodules bilaterally.

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The post-operative course was essentially uneventful. Discharge from hospital occurred on February 8, 1956, with apparent recovery from the depression. During follow-up studies in May 1956, February 1957, and August 1957, the patient reported feeling well and being regularly employed. Some complaints of general weakness have been persistent.

Post-hospital laboratory studies have been within normal limits. The urinary 11-Oxysteroid excretion levels have been as follows: 1.3 mg. in 24 hrs. on 12/13/55; 2.1 mg. on 2/5/57; and 1.1 mg. on 8/8/57. Total circulating eosinophile determinations were 180 per cu.mm. on 12/15/55; 282 per cu.mm. on 5/9/56; and 108 per cu.mm. on 8/8/57. X-rays of the spine continue to show osteoporosis. There has been a weight gain of more than 20 pounds since the hospital admission date. Further observational studies will continue.

The patient's response to psychotherapy provided some interesting sidelights on the psychophysiological relationships. When it became evident that we were not getting a favorable response from the adjunctive therapy program and that ECT could not be utilized, we felt that individual psychotherapy should be attempted. The patient was seen once a week, the immediate goal being the establishment of the kind of treatment relationship which would enable him to look upon the therapist as a source of support in his current emotional crisis. During the early sessions there were manifestations of depression and of passive-aggressive behavior: whining, self-justification, hypercritical attitude toward examinations and treatment procedures. He gradually responded to treatment by attenuating the passive-aggressive measures and by attempting to involve himself in the adjunctive therapy program. His complaints of weakness and tiredness continued as did the feeling that the hospital methods were not calculated to improve his condition. He became more hopeful after he accepted proposed surgery and continued to improve in mood after surgery was completed.

Psychological examinations conducted a year and a year and a half after discharge have demonstrated maintained emotional stability.

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HYPNOTHERAPY FOR ACHALASIA OF THE ESOPHAGUS (CARDIOSPASM)

JEROME M. SCHNECK, M. D.[1]

A 48-year-old patient requested hypnotherapy for cardiospasm of two years duration. He complained of dysphagia, eructation, regurgitation, lacrimation, and weight loss. Pain was often severe. Medications had not helped. One year previously, passage of a mercury-weighted tube brought brief relief followed by recurrence. Two esophageal roentgenograms showed achalasia and dilatation.

The cause of cardiospasm is unknown. Cardioplasty and esophagogastrectomy are frowned upon and there is no general agreement on indications for surgery. A report on esophagomyotomy appeared recently (1). Forceful dilation has had varying success.

Initial hypnotherapeutic efforts were to allay anxiety and reduce general muscular tension. Some improvement resulted immediately. Then a conditioning technique was

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used in the form of a silent numerical count. The count was employed by the patient during a spasm or its onset to induce relaxation of the lower esophageal sphincter. It proved effective for considerable additional help. Spasm was hypnotically induced and relieved in relation to fantasied food ingestion under hypnotically accelerated time conditions. Direct correlation was present between use and omission of the hypnotic conditioning and the presence and degree of spasm, followed by more permanent change. Relief was very gratifying. The patient gained 15 pounds.

He submitted then to forceful dilation under surgical care after several weeks of daily esophageal washings. There was some change, followed by considerable relapse. The hypnotherapeutic benefit remained unaffected. Additional dilation was considered but the patient was hesitant. Multiple dilations are common.

Continuing in psychiatric treatment, he explored deep-seated personality problems. General benefit derived did not seem to affect minimal residual intermittent discomfort. Strong masochistic components were evident in his character structure. Hostility and dependency needs were excessive. A significant sexual episode preceded the onset of cardiospasm but its elucidation was not helpful.

Past history revealed deprivation of parental love. The patient, in turn, was limited in his capacities for deep affection. Sexual relationships were numerous and superficial. The cardiospasm suggested association with a pattern of rejecting in relation to food and its symbolic equivalents, but insights did not reinforce practical gains. He focussed on its possible self-punitive attributes without further results.

Gratifying response of this patient to hypnotherapy suggests desirability of further investigation of its use in achalasia of the esophagus, especially in early cases to forestall irreversible structural change, and prior to surgical procedures with their risk of complications, some of which may be extremely severe.

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AUTHORITY V. REASON

In discussion it is not so much weight of authority as force of argument that should be demanded. Indeed the authority of those who profess to teach is often a positive hindrance to those who desire to learn; they cease to employ their own judgment, and take what they perceive to be the verdict of their chosen master as settling the question. In fact I am not disposed to approve the practice traditionally ascribed to the Pythagoreans, who, when questioned as to the grounds of any assertion that they advanced in debate, are said to have been accustomed to reply "He himself said so," "he himself" being Pythagoras. So potent was an opinion already decided, making authority prevail unsupported by reason.

—Cicero,
de Natura Deorum

CORRESPONDENCE

PSYCHIATRIC IMPLICATIONS IN CANCER SURVIVAL

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: Cancer feeds on ignorance and fear. Cancer strikes some half million Americans each year—"one out of four"—almost one a minute. "One out of four" usually means one *other* person out of four ('not me.')

Publicity campaigns and educational programs on the part of the American Medical Association and American Cancer Society have failed to persuade more than a few more people to consult their physicians as soon as signs of cancer develop. This material is carefully read mainly by persons who have already had some direct or indirect experience with cancer. At surgery approximately three-quarters of patients with visceral cancer have lymph node metastasis. The rate of cure drops from 75 to 20% for cancer of the breast, colon and rectum. It has been estimated that only half of the curable cancer cases are being cured. The rate among surgeons is said to be two-thirds the rate for non-surgeons.

Statistical study of the problem shows clearly that the weak spot in our attack lies in late diagnosis. With the diagnostic means now available cancer can be detected in a high percent of cases if the patient will notice and report rather indefinite symptoms and have routine physical examinations. If we continue to wait for the occurrence of cancer symptoms we will continue to operate on late cancers. Aversion to procedures such as rectal and vaginal examinations must be overcome both by doctors and patients. A more effective tool than surgery is badly needed, yet for most internal cancers there is nothing else to use and there may be nothing better for some time. Again fear and ignorance must be overcome. This fear was justified when cancer operations carried a high mortality and before anesthesia was discovered.

The objection is frequently made that factual information about cancer symptoms will lead to widespread cancer phobia. The author is well aware of this problem from actual cases. However, cancer phobia can be treated successfully but late cancer cannot! The patient's concern for minimal symptoms should be accepted as not entirely unrealistic. Hypochondriacal patients are partly right. They make their lives and the lives of their family miserable but they do not overlook minimal symptoms which might indicate cancer. Psychiatrists should be careful to consider this possibility.

Formerly patients with tuberculosis were not given their diagnosis because it was thought that this would undermine their confidence in recovery. Evasion and subterfuge are anxiety provoking. Honesty is essential in the interpersonal relationship between psychiatrist and patient. Why should the non-psychiatrist deviate from this principle in dealing with cancer patients? One eminent surgeon answers the question, should the patient know the truth about cancer? "unconditionally yes." Perhaps certain psychiatric patients should be excepted. This surgeon has pioneered the planned re-operation of patients who are found to have positive lymph nodes, at the time of surgery. Obviously these patients must be told the truth if the surgeon is to have their cooperation for a "second look."

A final plea is made to the psychiatric profession to interest themselves personally and as a group in the cancer problem. Have *you* had a complete examination recently?

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MURDER BY ADOLESCENTS

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: Regarding "Murder by Adolescents with Obscure Motivation" by A. Warren Stearns, M. D., in the October JOURNAL, and the correspondence in the January number, the following comments seem appropriate.

Dr. Stearns' article on juvenile murderers emphasizes once more how little is known about the mentality of offenders. Psychiatrists study chiefly the patients they encounter in mental hospitals, clinics, and private practice. Few have the opportunity to observe offenders. With juvenile delinquency a nation-wide problem, surely we, as psychiatrists, should know more about it than we do. The impression prevails that many juvenile delinquents are not schizophrenic or psychopathic in the accepted sense of the term; however, to call them "antisocial" is unsatisfactory. The fact that we do not even have a satisfactory nosological terminology is indicative of our ignorance.

The Association for Psychiatric Treatment of Offenders [APTO] recently held a conference in New York City with Dr. Lauretta Bender, Dr. Ralph Brancale and myself as speakers, and several discussants who had also studied such patients. The discussion was based upon material from over 50 cases which the speakers had observed themselves. The chief impression shared by the participants was how little we knew on this important subject. Juvenile murderers seem to belong to many different types which must be differentiated carefully, to make prognosis and effective treatment possible.

In trying to arrange the conference, I was impressed that several well-known psychiatrists refused to speak because, although they had examined or treated juvenile murderers, they had learned so little that they did not feel justified in speaking. One outcome of the conference was agreement that there was a great need for an effort to collect adequate numbers of cases to allow generalization. In New York State, a number of juvenile murderers have been discharged from institutions after some years. These patients certainly should be followed psychiatrically with a view to obtaining the data without which the problem cannot be approached scientifically.

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THE SUBJECTIVE

Thus the whole sensuous and intellectual furniture of the mind becomes a store whence I may fetch terms for the description of nature, and may compose the silly home-poetry in which I talk to myself about everything. All is a tale told, if not by an idiot, at least by a dreamer, but it is far from signifying nothing. Sensations are rapid dreams; perceptions are dreams sustained and developed at will; sciences are dreams abstracted, controlled, measured, and rendered scrupulously proportional to their occasions. Knowledge accordingly always remains a part of imagination in its terms and in its seat; yet by virtue of its origin and intent it becomes a memorial and a guide to the fortunes of man in nature.

—SANTAYANA

COMMENT

OBJECTIVITY IN PSYCHIATRY

By objectivity in psychiatry I mean the application of scientific methods to the problems of psychiatry, *i.e.*, to the understanding of mental illness. From such knowledge follows the ability to develop rational treatment. The scientific method involves the recognizable isolation of factors by independent observers, and units of measurement that are reproducible experiments, and the ability to predict from the factors.

Let us admit at the outset that we deal with the most complex of all phenomena which we know in the universe, the highest organization of anything we know, viz. the nervous system, and its product the human mind. In essaying an investigation, even a rudimentary knowledge of this complexity imposes upon the investigator extreme humility. And as with any intricate problem, we must simplify it and limit ourselves in order to make any progress. After the initial hard steps we may gradually extend the field by admitting new factors. The difficulty lies in choosing items that are not too elementary to be significant, but which are at the same time sufficiently simple to admit of scientific study.

Thus quantum mechanics would be too elementary, too much a basic property of matter, for specific relevancy; on the other hand, many subjective manifestations are too vague in their unresolved state, too complex for a successful study by available scientific methods.

If one speaks of objectivity in psychiatry he is almost immediately confronted with the argument that the essence of the psychic phenomena are subjective. I would go even further and agree with Descartes that the center of our living, the *sine qua non* of our being is subjective. But because the recognition of these subjective states is difficult or impossible either by the patient or by an observer, and because the description is oftener a description of a particular psychiatrist or describer, usually also involving an obscure interpretation by the particular psychiatrist, such subjective descriptions are unsuitable for the requirements of science. Medical students do not know nor usually learn in four years how to make objective formulations; often no one except the student who makes the formulation can recognize the patient by his description. Unfortunately, in the U.S.A. it is possible to go through a psychiatric residency without performing a single piece of research or an experiment.

All this may sound trite and elementary, but the recognition of these principles is the first step, and the most difficult one, that the student of psychiatry has to take before he can make an objective, scientific study of the problems confronting him.

As is true with any difficult study, there is confusion initially; we are moving as it were in a dark woods where there is little light and no path, or perhaps where there are many faint trails but we do not know where they lead. Part of the confusion that exists in psychiatry arises from mistaking the requirements for investigation, or the obligations of the therapist who must work within a time limit, and must use the best available empirical means. Here the difference between science and practice should be acknowledged and respected. A reference to the history of science shows, for example that the *discovery* of calculus and underlying physical laws were made decades or centuries before their *use* in the construction of an aeroplane, of insulin by Best and Banting before its application to psychiatry. A recognition of what is scientific investigation and what is therapeutic obligation would remove much confusion from our field.

What are the criteria for a scientific discipline? 1. The items should be clearly defined and recognizable by separate, independent workers. 2. They should be obtainable by independent workers when the same situation is repeated. 3. Given the same factors, recognizable by different investigators, they should lead us to predict results

and happenings. If prediction is not possible, we have not an exact science, but only a history. Finally we should not accept dogma and authority for verifiable facts. Admiration for our prominent figures of science and psychiatry should not blind us so that we cannot see new facts and concepts.

Today there are many important and promising objective approaches to the study of psychiatry—biochemical, neurophysiological, genetic, pharmacological. Sometimes the work is retarded through the confusion of trying to fit the results into impossible dogmatic and rigid concepts, rather than to modify the concepts to fit facts.

In a short statement such as this it is not possible to review the success of the many fruitful though isolated investigations now going on in experimental psychiatry. To mention but one example of the success of the scientific analysis in the field of complex phenomena, we now have a very good measure in the acquired visceral responses, especially cardiovascular, of the effect of one individual on another ("effect of person"), so that the role of the person can be isolated from the other factors.[1]

From this we see that often the success of the psychotherapist is not due to his pet concepts and dogmas but simply to the result of support of one individual by another authoritative one—the effect of person. Also a study of types (Pavlov's temperaments) perfected recently by the Russian workers, especially Bykov and his school, may give us the basis of a preventative psychiatry. Prophylaxis is the immediate great need of psychiatry, and it seems that we are laying a stable groundwork on which to build a truly preventative psychiatry comparable to the prophylaxis of infectious diseases that has emptied our contagious hospitals.

Some positive achievements of the experimental method are the ability to reproduce definite neuroses and psychoses in animals and the isolation of the responsible factors; the scientific statement of the principles of the formation of patterns of behavior and conditioning; the reproduction of certain "psychosomatic" states; the production of psychogenic hypertension by the conditional reflex method, and the success of predicting and preventing manic attacks, perfected by the Russian school of psychiatry.

In conclusion I want to add a word of caution to those who, like me, believe in the success of an objective psychiatry in ameliorating if not eliminating our mental illnesses, that we should beware of the danger of the sense of security in such words as *objective* and *dynamic*, rejecting any feeling of well-being or superiority which such banners give us, but looking behind the words into the essence of the meaning of the concepts.

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[1] Gantt, W. Horsley: What the Laboratory Can Teach Us About Nervous Breakdown. New York: Inter. Univ. Press, 1957, pp. 73-110.

POPULAR EDUCATION

Our modern system of education . . . has produced a vast population able to read but unable to distinguish what is worth reading, an easy prey to sensations and cheap appeals . . . whether in the twentieth or twenty-first centuries the lower forms of literature and journalism will completely devour the higher has yet to be seen.

—G. M. Trevelyan
(English Social History, 1942)

NEWS AND NOTES

American Fund for Psychiatry.—Dr. Richard H. Young, dean of the Northwestern University Medical School, and secretary of the Association of American Medical Colleges, has been named chairman of the American Fund for Psychiatry. He succeeds Dr. Vernon W. Lippard, dean of the Yale University School of Medicine.

The Fund, a national philanthropic organization with headquarters in Chicago, also announced the re-election of Irving B. Harris, president of Michael Reese Hospital Medical Center, as president.

The Fund provides teaching and research fellowships to young psychiatrists. It is supported by 75 major corporations and several hundred doctors across the country.

Death of Dr. William F. Lorenz.—Dr. Lorenz, Professor Emeritus of Psychiatry at the University of Wisconsin died February 18, 1958, age 76.

Born in New York, Dr. Lorenz received his medical degree from the Bellevue Hospital College of Medicine. He served in the Spanish-American War in 1898, and commanded a field hospital in France during World War I. After the war he became active in promoting the rehabilitation of disabled servicemen and was a member of the Veterans Administration's medical counsel since 1923.

Widely recognized for his research in the use of carbon dioxide in the treatment of psychoses, Dr. Lorenz was also a contributor to new remedies in the treatment of syphilis of the central nervous system.

Institute for Psychotherapy, Univ. of Vienna.—Professor Hans Hoff announces a 2-year course in psychotherapy to be given at the Psychiatric-Neurological Clinic, University of Vienna.

The first year will introduce the problems of psychotherapy and survey the various schools and theories, their limitations and indications. The students will also participate in clinical work, in the staff and ward conferences, and share the scientific activities of the several research departments. In the second year the various special methods of therapy of special groups of patients will be taught, especially the various forms of brief therapy will be demonstrated and practically applied.

Graduate medical students and doctors are eligible for this course. A certificate will be issued to those who successfully complete it and pass the examinations.

Further information may be obtained from Professor Hans Hoff, University of Vienna, Vienna, Austria.

Dr. Philip R. Lehrman Dies.—Dr. Philip Lehrman, Clinical Professor of Neurology and Psychiatry at the New York University-Bellevue Medical Centre and visiting psychiatrist at Bellevue Hospital, died at the age of 62 on February 5, 1958.

A graduate of Fordham Medical School, Dr. Lehrman spent a year working under Dr. Sigmund Freud in Vienna in 1928. He was a member of The American Psychiatric Association and a former president of the New York Psychoanalytic Society. During World War II he served as lieutenant commander in the Medical Corps of the Naval Reserve. He contributed widely to psychiatric and psychoanalytic literature.

N.I.M.H. Research Grants.—Fifty-three new research grants totaling $1,019,659, have been awarded by the National Intitute of Mental Health upon recommendation of the National Advisory Mental Health Council. The Advisory Council also approved the continuation of 12 research grants amounting to $264,292.

The new grants were awarded as follows: Psychiatry 11, Psychology 20, Pharmacology 4, Sociology 5, Biology 1, Medicine 2, Chemistry 1, Biochemistry 3, Public Health 1, Anatomy 1, Anthropology 2, Physiology 2.

Intellectual Loss from Brain Injury.—Psychologists at the Walter Reed

Army Institute of Research, Washington, D. C. have, as the result of a study begun in 1955 to determine the effect of brain injuries on the intellectual ability of a patient, found that while there is a decisive decrease, with time and skilled care much of this loss is recoverable.

Their report is based on a study of 64 enlisted men who had been hospitalized for serious brain injuries. At the time of induction they had been given the Army Classification Battery Tests. Two months after brain damage they were re-tested. Eighty-seven percent fell many points below their original scores.

Two months later on a further re-testing, scores showed a 50% recovery of intellectual ability, thus evidencing "considerable, spontaneous recovery."

Dr. Lewis B. Hill.—Dr. Lewis Brown Hill died February 4, 1958, at his home on the hospital grounds of the Enoch Pratt Hospital, Towson, Md. A leader in the development of psychiatry and psychoanalytic training in Maryland, Dr. Hill had been assistant professor of psychiatry at the Johns Hopkins Medical School since 1944, and a consultant to the National Institute of Mental Health.

In 1939 Dr. Hill served as president of the American Psychoanalytic Association. He was a fellow of The American Psychiatric Association and the American Orthopsychiatric Association. His extensive contributions to the literature includes a recent book, *Psychotherapeutic Intervention in Schizophrenia.*

Protective Emblem for Civilian Doctors in Wartime.—The General Assembly of the World Medical Association has approved a protective emblem, together with regulations, for civilian doctors, medical personnel, and medical care establishments during periods of armed conflict. The matter was referred to the 57 member associations of the W.M.A. for approval, and a number of the member associations have submitted the proposals to their governments for legislative action to ensure recognition and jurisdiction.

The government of the Principality of Liechtenstein became the first to ratify the emblem and regulations.

Dr. Bowman Teaches in Bangkok.—Following the meeting of The American Psychiatric Association in San Francisco in May, 1958, Dr. Karl M. Bowman, former president of the A.P.A., and professor emeritus of psychiatry in the University of California, will go again to the Orient where, during the months of June, July and August, he will be guest teacher in the Medical School of the University of Bangkok.

The Gerontological Society, Inc.—The 11th annual scientific meeting of the Gerontological Society will be held at the Bellevue Stratford Hotel, Philadelphia, Pa., November 6, 7, and 8, 1958.

Abstracts of papers for the program should be submitted to the program committee for consideration by July 1, 1958. Abstracts should also be sent to the sub-chairmen of the section in which the author(s) elect to give their paper.

The sub-chairmen are: *Clinical Medicine*—Dr. Ewald Busse, Duke Univ. Hosp., Durham, N. C.; *Biology*—Dr. Morris Roackstein, Dept. of Physiology, N. Y. Univ., 550 First Ave., New York 16, N. Y.; *Psychology*—Dr. Ethel Shanas, Nat. Opinion Research Center, 5711 S. Woodlawn Ave., Chicago, Ill.; and *Sociology*—Dr. W. M. Beattie, Jr., Dept. of Sociology, Washington Univ., St. Louis, Mo.

There will be one meeting open to the public.

Co-chairmen of the meeting are: Dr. Warren Andrew, Bowman Gray School of Medicine, Winston-Salem, N. C., and Dr. Joseph T. Freeman, 1530 Locust St., Philadelphia 2, Pa.

Society for the Scientific Study of Sex.—The Society will hold its first annual meeting on November 8, 1958, at the Barbizon Plaza Hotel in New York City. For details, write to Robert V. Sherwin, 1 East 42nd St., New York 17, N. Y.

Rehabilitation Centers.—The U. S. Department of Health, Education and Welfare has published in book form the papers

presented at the Institute on Rehabilitation Center Planning, in February 1957, titled, *The Planning of Rehabilitation Centers.*

Some 30 aspects of the planning and operation of rehabilitation centers for disabled people are discussed including information on evaluating the need for a center; estimating financial resources; budgeting; personnel recruitment, and a consideration of the relationships among the center, the community and the state and federal governments.

The book may be obtained from the U. S. Government Printing Office, Washington, D. C. at $1.25 per copy.

The Mentally Retarded Adult.—Under the auspices of the N. Y. State Interdepartmental Health Resources Board, an extensive report has been done by Gerhart Saenger, Ph. D., titled, *The Adjustment of Severely Retarded Adults in the Community.* The study encompasses both individuals in institutions and at home, but is concerned particularly with the latter and their adjustment within the family circle and the community.

This 176 page report may be obtained from the New York State Interdepartmental Health Resources Board, 11 North Pearl St., Albany 7, N. Y.

National Institute of Mental Health Grants.—Surgeon General Leroy E. Burney of the Public Health Service has announced that grants amounting to $13,693,845 have been awarded since July 1, 1957 for training in psychiatry, psychology, psychiatric and social work and psychiatric nursing. The grants have been used to establish and expand training in mental health in medical schools, hospitals, psychology departments of universities, schools of nursing, social work and public health.

Availability of Scientific Research in the *U.S.S.R.*.—Pergamon Institute, a nonprofit foundation, has recently been formed in Washington, D. C. for the purpose of making available to English-speaking scientists, doctors and engineers the results of scientific, technological and medical research and development in the Soviet Union and satellite countries. To this end the Institute is initiating large-scale translation programs of journals, books and individual papers in these fields, which are available to learned societies, Government departments, trade associations, scientists, doctors and engineers.

The Institute will supply, free of charge, to any person in the above categories, a monthly list of all significant articles and books currently published in his field in the U.S.S.R. An English translation of any article listed may be ordered, the charge being based on a cooperative cost-sharing.

The Institute further aims to encourage the teaching of Russian to non-Russian speaking scientists; to compile and publish specialized dictionaries from and into Russian; and to serve as a forum in which Soviet and non-Russian scientists will be able to discuss problems of common concern.

Address: Pergamon Institute, 122 East 55th St., New York 22, N. Y.

International Research Newsletter in Mental Health.—The Postgraduate Center for Psychotherapy announces the forthcoming publication of a Newsletter on Mental Health, to discuss, evaluate and exchange information in all areas of the mental health field.

Material is solicited for the first spring issue, of the following nature. 1. Description of ongoing or projected research for which the author would like constructive criticism as to the theoretical value, research design, etc. 2. Research ideas or ongoing work will be printed to facilitate replication and extension of such work. 3. Summaries of controversial presentations made at staff conferences and other meetings which are normally not published. 4. Work from foreign countries in mental health research.

Those interested in submitting material or subscribing to the publication, for which there is no charge, are asked to write to The Newsletter, Postgraduate Center, 218 East 70th St., New York, N. Y.

BOOK REVIEWS

A New Psychotherapy in Schizophrenia. By *Marguerite Sechehaye.* Translated by Grace Rubin-Rabson. (New York and London: Grune and Stratton, 1956, pp. 199, $4.50.)

Two books by this author have been devoted to the case of her patient Renee; namely "Symbolic Realization" published in 1947 and "Autobiography of a Schizophrenic Girl" appearing in 1951. These books have been read and discussed by many American psychiatrists.

In her book on "Symbolic Realization" Mme. Sechehaye described the successful therapy of this severely mentally ill adolescent girl with schizophrenia. The treatment extended over a period of 7 years with the result that the patient became a healthy independent adult.

In the present book the author has first summarized briefly Renee's case history "and the psychotherapy which cured her" to orient the readers in the clinical basis for what follows in the text. The book is based on a series of lectures presented at the Bürgholzli Clinic, to stimulate further studies. Here she expands the theoretical and practical features of the famous case and explains her ideas on schizophrenia as a disorder.

The author considers schizophrenia as a reaction to severe psychological traumata occurring in a person with an original predisposition which is implied in the term "schizoid constitution" and which renders him unable to meet and overcome injury, frustration and anxiety. Her therapy is based on the supposition that the active phase at the beginning of a schizophrenic process represents a revival of a complicated childhood situation with its psychopathological adjustment, while the stabilization period of the psychosis is the later adjustment or defense by entering the magic world of unreality.

In the various sections of the text Mme. Sechehaye explains the reasons why it is difficult for schizophrenics to make interpersonal contacts, the nature of their defenses against this, and their primary needs, which may be attained by means of the symbolic realization type of therapy.

The therapist must offer the patient a new or different reality which would have prevented the psychosis if it had been experienced in infancy. This new reality must be presented in the form of presymbolic magic. Since this therapy is aimed at satisfying the needs and correcting the insecurities of early childhood, it can be afforded only by a therapist with a keen intuition, with a parental attitude within the structure of psychoanalysis and with a knowledge of schizophrenic symbolic methods of communication.

The book is interesting and stimulating reading and it is hoped that it will encourage others to experiment with the author's methods that we may learn finally just how successfully schizophrenics can be cured by psychologic methods alone. What will happen to Renee in future years as well as to many other reported cures? Are they permanent, at least obtaining over many years? Does psychotherapy merely modify the symptomatic expressions? Or does it influence favorably the fundamental processes of the disorder? We are still urgently in need of objective, systematic prolonged follow-up studies of the results of any and all current therapies for schizophrenia.

The author states in her introductory chapter "The cure of a schizophrenic by a psychologic therapy constitutes a fact in itself. It remains to be seen whether, utilizing the same method in the same way, under conditions as alike as possible, and with similar symptoms, the same phenomenon of cure will appear again." Certainly this statement indicates a scientific attitude on the part of the therapist, and if adhered to rigidly, will afford most valuable information.

Nolan D. C. Lewis, M. D.,
Princeton, New Jersey

Mental Depressions and Their Treatment. By *Samuel Henry Kraines,* M. D. (New York: The Macmillan Company, 1957, pp. 555. $8.00.)

This is a comprehensive book on mood states. The breadth of the approach is evident from the list of special areas dealt with in separate chapters: Normal Moods; Psychopathology; Physiopathology; Heredity, Physique and Statistics; Fluctuations; Physical Symptoms; Mood Disorders and Suicide; Emotional Isolation, Irritability and Fears; Thinking Changes; Sexual Disturbances; Neurotic and Schizophrenic Complications; Variations; Diagnosis; Psychologic Therapy; Biologic Therapies; The Mechanism and Etiology of the Manic-Depressive Illness: A Theory.

Dr. Kraines never wanders from the individual human problems, illustrating liberally from case histories. The many references at the end of each chapter and in the Cumulative Bibliography are an aid to the serious student of these disorders.

The main departure from most works on depressions is the author's theoretical formulation which is stated best in his own words: 'The thesis of this book is a reversal of the Freudian point of view. Though acknowledging the significant role of psychic factors in modifying, complicating, and prolonging symptoms, it emphasizes rather the constitutional factor in the etiology, course, and outcome of the Manic-Depressive Illness. Presenting the evidence accumulated during the last half century, it postulates that the etiology is a combination of hereditary susceptibility and a physiologic (often hormonal) precipitating factor; that the mechanism of the illness is in disturbed function of the diencephalic area, including the thalamus, the hypothalamus, the reticular system, and the rhinencepha-

lon; and the symptoms are the result of primary physical alteration in the diencephalic area and of secondary psychic disturbance."

The author devotes an extensive appendix to the presentation of the evidence for this theory and the approach throughout the book is in relation to the theoretical framework.

While no doubt many psychiatrists will not accept this formulation, the book should be stimulating to those who are not content with a strictly psychological explanation of the depressions or satisfied with psychotherapeutic techniques only in the treatment of these common and serious disorders. The book is recommended to psychiatrists and residents in training who wish something more than is to be found in most treatises on depressed states.

JOHN G. DEWAN, M. D.,
University of Toronto.

POLICE DRUGS. By *Jean Rolin* (trans. from the French). (New York: The Philosophical Library, 1956, pp. 194. $4.75.)

This is a valuable little volume, on the so-called "truth drugs." It includes a historical survey of the use of the various drugs in this category and a rather extensive bibliography. The author's thesis is contained in the sentence, "There is a slippery slope between forensic medicine and police torture and it becomes essential to check the descent." An eloquent plea is made for the preservation of the individual's right to keep silent in a world in which privacy is constantly diminishing. This reviewer cannot agree with the author's total condemnation of the use of the indeterminate sentence. Nor does he feel that in the U. S., at least, there is justification for the complaint that "medical reports already carry far too much weight in judicial decisions." However, the author's main thesis that great caution must be exercised in the use of an abreactive drug in police and trial procedures, is sane and timely.

MANFRED S. GUTTMACHER, M. D.,
Baltimore, Md.

INTRODUCTORY PSYCHOSOMATIC DENTISTRY. By *John H. Manhold, M.D.* (New York: Appleton-Century-Crofts, Inc., 1956, pp. 193. $6.00.)

This book is a worthwhile contribution to dental literature relating to psychosomatic dentistry. The book is divided in 2 parts. The first part deals with the psychosomatic concepts, history, historical background, statistical methods, research, and results. The second part presents worthwhile practical applications for the dentist.

For many years it has been felt by many astute observers in dentistry that the psychosomatic concept was valid regarding the etiology of dental caries and periodontal diseases. As early as 1882 there had been published a theory that the mind could effect the dental structures. Since that time many articles have been written dealing with the effect of emotions, anxiety and psychological processes on the dental structures. Dr. Manhold's scientific work has proved finally that there are definite psychosomatic causes for dental caries and periodontal diseases.

Many eminent dental teachers and dentists have shied away from the psychosomatic point of view and in fact have derided such a concept as being untenable. After reading Dr. Manhold's book, the reviewer thinks they will change their minds or at least look upon psychosomatics more favorably.

The book has been written with 2 purposes in mind. The first is to provide a practical scientific basis for the application of a psychosomatic concept to dentistry. The author has presented his own research studies and evaluated the results according to the number of subjects involved, the statistical significance, and the validity of the method. The second is to discuss practical applications of the psychosomatic concept to dentistry. Methods of dealing with difficult patients in situations commonly encountered are emphasized.

The author's discussions of the statistical methods and formulas used were presented for the layman to evaluate and his results could discourage many readers. Mathematical formulae are uninteresting to most people who are not interested in biometrics. These chapters would have been better placed at the end of the book.

It is the misconception of many dentists and layman that psychosomatics and hypnosis are synonymous. Manhold deals with this misunderstanding. However his statement, "there is little, if any, place for the use of hypnosis by the dentist in the dental practice" is not a valid statement. There are many dentists who are using hypnosis successfully in dentistry. The 2 reasons that the author gives for his statement are: first that the history of hypnosis is generally ill considered, and secondly that dangers can occur in the use of hypnosis by those who are not properly versed in its use and who are not completely competent to handle possible needed countermeasures. There are no procedures in medicine or dentistry that are not potentially dangerous if not carried out by skilled physicians and dentists. The thousands of well trained dentists in the United States and Canada who have been using hypnodontic techniques successfully for many years would agree that the novice should forgo its use. One of the principles of the American Academy of Applied Psychology in Dentistry is to stimulate the use of psychological procedures in dentistry, including hypnosis, and high standards of teaching have been set up to teach this worthwhile aid to dentistry, and to see that only those who are well trained and are psychologically orientated, use it.

Dr. Manhold's book is a worthwhile addition to the library of the dental student, the dental practitioner, and the dentist engaged in research.

D. MOORE, M. D.,
Faculty of Dentistry,
University of Toronto.

PRINCIPLES OF GENERAL PSYCHOLOGY. By *Gregory A. Kimble.* (New York: The Ronald Press, 1956, pp. 400, $5.00.)

The author states that "the purpose of this book is to present an adequate and scientifically sound account of contemporary psychology, at the introductory level." It could be argued that the account of contemporary psychology is far from complete, there being very scant notice of such areas as emotion and thinking and no mention at all of the applied fields. However, as an introductory text book for beginning students it is sound and adequate. It follows a traditional pattern, stressing methodology and citing the usual experiments. The book is organized in 4 parts: 1. basic methodology, including chapters on intelligence presumably illustrating methodology; 2. sensation and perception; 3. the modification of behavior and 4. behavior dynamics. It is a sound, useful introductory text with no particular feature to distinguish it from dozens of other similar texts.

KARL S. BERNHARDT, PH. D.,
University of Toronto.

TROUBLES MENTAUX AU COURS DES TUMEURS INTRACRANIENNES. By *H. Hécaen* and *J. de Ajuriaguerra.* (Paris: Masson et Cie, 1956, pp. 154, 1500 fr.)

This is a study of 439 cases of brain tumor from the Neurosurgical Service of the Hopitaux Psychiatriques de la Seine. Of these cases 229 (52%) exhibited mental symptoms. The authors have studied the material chiefly from two points of view. On the one hand the mental symptoms were studied according to the localization of the tumor. On the other hand the mental symptoms were classified in an effort to establish their pathogenicity.

Three types of mental symptoms were differentiated: 1. conditions indicated by confusion and dementia ("états confuso-démentials"); 2. changes in disposition and personality ("troubles de l'humeur et du caractere"); 3. paroxysmal changes accompanied by hallucinatory manifestations, loss of consciousness, dreamy state ("désordres paroxystiques").

Papilledema, used as evidence of increased intracranial pressure, was present in 59% of all cases and in 67% of those cases accompanied by mental symptoms. Papilledema, and consequently increased intracranial pressure, could not be correlated specifically with the mental syndromes described.

Out of 80 instances of tumors of the frontal lobes, mental disorder was present in 54, producing a syndrome characterized by confusion and dementia in 60%, changes of the disposition and personality in 37.5%, and paroxysmal disorders in 10%. Mental deterioration was the first symptom in a fifth of the cases. Loss of memory, related to events of a certain time, place and incident ("amnésie de fixation") was present in 16 cases, sometimes in pure form or predominating in a complex of other memory disorders. Akinetic conditions ("états akinétic") were observed in 23 cases; however, in almost every instance they were present as a consequence of the confusion. Dementia in this group often was associated with euphoria. Morbid irritability occurred in 13 cases, and emotional lability in 9 instances. Hallucinatory manifestations were observed in only 7 patients.

Out of 75 cases of tumors of the temporal lobes, mental disorder was present in 51 instances. Mental deterioration occurred as the initial symptom of the disease in 28% of the cases. Most important in this group were paroxysmal manifestations observed in 24 patients: visual, auditory, olfactory and gustatory hallucinations, and in 5 cases dreamy states. Hallucinations often indicate the beginning of the development of temporal and occipital tumors.

In 24 cases, the frontal and temporal lobes were simultaneously involved by tumors. Mental disorders in this group were present in 11 instances. Confusion, or dementia, was noticed in 41% of the cases; disorders of disposition and personality in 16%. No case of hallucinatory phenomena occurred in this group. It was not possible to define symptoms particularly characteristic of this group. The authors were not able to draw any conclusions concerning tumors of the corpus callosum.

In 75 cases of tumors of the parietal lobes, mental disorders were observed in 39 patients. Mental disorder as an initial symptom of parietal tumors was found in 16% of the cases. The authors were not able to define a particular type of psychic disorder always present in tumors of the parietal lobes. However, hallucinatory phenomena, characterized by the feeling of absence, or the illusion of transformation and displacement of one half of the body or of one extremity, were present, with rare exceptions, only in cases of parietal tumors.

In 25 cases of occipital tumors, 13 produced mental disorders. Visual hallucinations indicated the beginning of cerebral disease in 5 instances. Confusion and dementia were present in a fourth of the cases, while personality changes and disturbances of disposition occurred in a similar number. Papilledema, accompanied or not by mental deterioration, was very frequent in tumors of the occipital lobes. Mental disorder appeared in 32% of the cases as the first symptom of an occipital tumor.

Out of 61 patients suffering from the mid-brain tumors ("tumeurs mésodiencéphaliques"), mental disorders were present in 23. The syndrome characterized by confusion and dementia occurred in 26% of the cases; personality and disposition changes were noted in 21%; hallucinatory phenomena occurred in 13%. Mental deterioration appeared in 11%, as the first symptom of a brain disease. Papilledema occurred in only 26 cases. Korsakow's syndrome was present in 6 cases while, with 1 exception, it was not observed in any other topographic type of brain tumor.

Out of 85 cases in which subtentorial tumors were present, mental disorder occurred in 34 patients, mental deterioration signifying the beginning of a brain disease in 11%. Although papilledema occurs very frequently, the incidence of confusion and dementia is lower than in all the other

topographic groups of cerebral tumors. In a number of cases, oneiric hallucinations (dreamy state) and automatisms occurred.

The appearance of mental symptoms seems to be the result of the localization of cerebral tumors rather than of the accompanying intracranial hypertension. Influences which, in general, modify the cerebral activity, are conducive to the appearance of psychic disturbances initiated by focal involvements. On the other hand, the progress of a general psychic disorganization may mask focal symptoms.

In summarizing their observations the authors emphasize the following features of the frontal psychic syndrome: subconfusional excitation, accompanied by expansiveness; irritability and akinetic syndrome. The mid-brain psychic syndrome is characterized by Korsakow's syndrome, euphoria, oneirism, and, though rarely, akinetic mutism. Psychic syndromes of parietal, temporal and occipital tumors are dominated by hallucinatory phenomena.

In spite of the existence of focal psychic syndromes, many factors may influence the value of clinical observations. Experiences on intracranial tumors can be used for the forming of a theory of the cerebral function only if considered together with other results of anatomic, clinical and experimental research.

This is a thin volume written with pleasing succinctness which adds a group of carefully analyzed cases of brain tumors with mental symptoms to the literature. A number of the illustrative case histories are described. There is a brief review of the history of the field and frequent comparison of the findings with those of other workers. Attention is given to the influence of the premorbid personality on the development of symptomatology, although this concept is poorly integrated with the rest of the material.

N. C. MORGAN, M. D.,
Warren, Pa.

ART, MYTH AND SYMBOLISM. By *Charles P. Montford.* (New York: Cambridge University Press, pp. 513, 1956. $20.00.)

This volume is the first of a series of four of the Records of the American-Australian Scientific Expedition to Arnhem Land, Northern Australia, which was in the field for some 9 months in 1948. Mr. Mountford has had many years of experience as an ethnologist in various parts of Australia, and by his writings, and beautiful films he has put all students of man greatly in his debt. With the present volume, his crowning achievement, he has made a contribution of major significance not only to our understanding of the meaning of art and its character among the aborigines of Arnhem Land, but to the history of art. *Art, Myth and Symbolism* is a book which no writer or student of the history of art can hereafter afford to miss. For the student of the human mind the book contains much ore worth refining. The astonishing resemblance of much of Arnhem Land aboriginal art to that of the Levantine Cave art as well as to that of the Bushman of the Kalahari cannot be accidental—it is either due to diffusion or to the fact of the unity of the human mind. The question is which? The book is illustrated with innumerable photographs, some in color, of the extraordinary art of the aborigines. The text is simply and clearly written and adds enormously to our understanding of the cultural process. Altogether a wonderful volume.

ASHLEY MONTAGU,
Princeton, N. J.

WOMEN OF FORTY. By *M. E. Landau.* (New York: Philosophical Library, 1956, pp. 49. $2.50.)

This little book written by a gynaecologist, who is married and a mother, is a good book. It is primarily for the laity and for women in their forties and over, but it is also a good book for obstetricians, gynaecologists and men in general practice. It is a large subject covered in 40-odd pages. The symptoms of the menopause are described in great detail and I note that mental instability and the nervous symptoms are given special mention. I am glad the nervous symptoms are given prominence because this is the problem that the physicians and gynaecologists are asked about most frequently. Many women become alarmed over their feelings of anxiety and depression, many of them have been told they may become mentally unbalanced or insane at the menopause. If they suffer from a mental breakdown at this time of life they certainly have had previous nervous or emotional disturbances.

The treatment of the menopause is assurance; this is usually all that most women require. If the flushes are troublesome minimal doses of oestrogen hormone are beneficial but such should be avoided if at all possible for this hormone produces troublesome menorrhagia and also promotes excessive growth of the endometrium, the activity of which may be dangerous at the menopause. The significance of unusual uterine bleeding is mentioned. Any woman around the menopause who has irregular vaginal bleeding should see her physician at once, for it is the first symptom of malignant uterine disease. In the chapter on the employment of women over 40, Miss Landau urges them to keep on working. There appears to be an ineradicable prejudice in employing older women in business. A woman who is healthy mentally and physically should by all means keep on working. Idleness creates unfounded fears whilst the active woman is happy and healthy.

H. W. JOHNSTON, M. D., F. R. C. S.,
Toronto, Ont.

BIOCHEMICAL INDIVIDUALITY. The Basis for the Genetotrophic Concept. By *Roger J. Williams.* (New York: John Wiley & Sons, 1956. $5.75.)

The author's impressive background in biochemistry enables him to explore various aspects of the field as a base for his genetotrophic concept of disease. His findings show the fallacy of attempting to establish a hard and fast set of so called

normal values. Just as no two personalities are alike, so no two individuals are chemically the same. The question still to be proved is whether the wide variations in bodily chemistry can explain the etiology of certain diseases.

Williams believes there is a genetic basis for biochemical individuality, *i.e.*, "every individual has a distinctive genetic background and distinctive nutritional needs which must be met for optimal well being," and he has done a great amount of investigation, plus the gathering of tremendous supportive evidence, to show the areas of individuality in anatomy and physiology as well as in biochemistry. He then points the way to new fields of application for many of these data, *e.g.*, in the causes of food, drug and other idiosyncrasies and in many other health and nutritional problems. The author also elaborates his ideas of implications of the concept of biological sciences, and uses the advances in psychiatry to explain some of the bases for human behavior.

In the new era of the chemical approach to mental illnesses, this stimulating and provocative book should be read by all psychiatrists.

A. E. Bennett, M. D.,
Berkeley, Cal.

A Guide for Psychiatric Aides. By *Charlotte R. Rodeman.* (New York: The Macmillan Co., 1956, $3.75.)

Although this book was written for the use of psychiatric aides, it would be extremely useful for any new member of the nursing personnel in a psychiatric hospital. It contains a wealth of material which is essential for the nonprofessional worker to know if he is going to work effectively with mentally ill patients. The brief historical review presents to the student the necessary background which enables him to recognize the changing emphasis on attitudes and concepts regarding psychiatric illness and how these have come about.

This introduction provides the setting to interpret the role of the psychiatric aide as a member of the team; how the quality of patient care is affected by the attitude of the personnel toward each other, toward the hospital and toward the patient. The author has very concisely dealt with attitudes, with emphasis on the need for the aide to understand himself and to develop a wholesome attitude towards his work. She proceeds in an easy conversational way to explain how he can learn to understand the patient's behavior, his own reactions, fears or feelings of inadequacy. Her personal knowledge and understanding of the aide, gained from many years of teaching and working with this group, enables the author to present actual situations realistically. For example: in regard to motivation to get patients to participate in certain activities; "What can you do in such a situation? How do you feel about the activities yourself? If you, personally, feel that they are of no great value, it will be difficult for you to convince a patient that they are valuable. Only if you within yourself honestly feel that there is positive value in an activity, can you convey that fact to the patient and show him that this is another step toward his recovery."

In this way she continues to explain many factors about the approach to patients, aide-patient relationships and nursing care of the patient, stressing throughout the importance for him to think of the patient as a person, that his behavior is a symptom of his illness, and his need for understanding and reassurance. The author has stressed the importance of good observation, maintenance of hygiene principles of health, protection of the patient and the physical care. In her presentation of the basic nursing procedures she has included simple, yet adequate, explanations of physiological functioning and anatomical structures to enable the aide to have a better comprehension of why and how the procedure is done.

The clarity of her presentation of subject matter and the conversational style make this book very readable and should present to the psychiatric aide a challenge to acquire the skills essential to work effectively with mentally ill patients.

Elsie Ogilvie,
School of Nursing,
Toronto, Canada.

New Gould Medical Dictionary (2nd ed.). Edited by *Normand L. Hoerr* and *Arthur Osol.* (New York: The Blakiston Division, McGraw-Hill Book Co., Inc., 1956, pp. 1463, 252 illustrations, $11.50.)

The terminology of rapidly growing fields since the first edition of the *New Gould Medical Dictionary* was issued in 1949 has been incorporated into this welcome second edition, with special attention to the fields of chest surgery and psychiatry. Extended coverage has been given to specialties allied to medicine, such as dentistry, veterinary medicine, organic medicinal chemistry and nuclear science.

This edition also gives both trade names and proprietary names of pharmacological drugs with definitions, although no effort has been made to assess the merits of various drugs.

In anatomy the Basle Nomina Anatomica terms with modifications are included, as well as the British Revision terms, and that part of the old terminology still in current clinical usage.

All in all a comprehensive volume of "live" medical terminology at a relatively modest price!

A. C.

Ageing in Transient Tissues. Edited by *G. E. W. Wolstenholme* and *Elaine C. P. Millar.* C.I.B.A. Foundation Colloquium. (Boston: Little, Brown & Co., 1956. $6.75.)

This volume contains the formal papers and the informal discussions presented at the second Ciba Foundation Colloquium on Ageing. The 27 authorities from Great Britain, the United States, France and Switzerland who participated in the symposium represent a variety of disciplines includ-

ing anatomy, biochemistry, biophysics, embryology, physiology and zoology. The 3-day-symposium dealt with "ageing in transient tissues," that is, tissues whose life span is less than that of the whole organism. It is interesting that no attempt was made at the outset to define "ageing" because, as the discussions proceeded, the term was used in almost every possible sense and, as the chairman, Prof. Amoroso, points out, no one "succeeded in formulating a simple definition to cover all the facts." Many of the 17 papers concern ageing phenomena in the foetus or the reproductive organs. The other papers concern ageing in erythrocytes, sweat glands, mitochondria, deer antlers and senescent leaves.

Three papers deal with the age factor in foetal development. Dorthy Price described organ culture studies demonstrating that in the foetal rat, endogenous testicular hormone maintains the Wolffian but not the Muellerian ducts and stimulates development of the embryonic seminal vesicles and prostate. Jost discussed the possibility that foetal development depends upon definite changes in foetal endocrine function and at appropriate stages with a somewhat stepwise utilization of hormones by the foetus and limited periods of action for the foetal endocrine glands. The probable importance of the placenta was emphasized by some of the discussants. Evidence that foetal development can be modified by disturbances in endocrine balance in the mother was presented by Tuchmann-Duplessis who described studies on the effects of administering growth hormone or cortisone to pregnant rabbits.

There are three papers on ageing in transient ovarian tissues. Zuckerman dealt with the germinal epithelium, showing that it has little or no regenerative capacity and that oögenesis does not occur appreciably during postnatal life. The "history and fate of redundant follicles" was described by Williams who had studied the sequence of changes in follicles undergoing atresia and the effects of gonadal and pituitary hormones upon this remarkably complex process. The growth and function of corpora lutea resulting from ovulation induced during pregnancy in guinea pigs was described by Rowlands. This work required first making quantitative studies of the development of corpora lutea, a problem that had not been investigated previously.

Four contributions concern the placenta. Wislocki discussed morphological and histochemical studies emphasizing that the "mammalian placenta is not a unified organ . . . but consists of several membranous structures" whose interrelations differ in various species and whose differentiation and functions progress at different rates during gestation. Physiological aspects of ageing in the placenta were considered by Huggett in his paper on "chronological changes in placental function." Villee discussed certain "biochemical evidence of ageing in the placenta" while Harrison described studies on the uptake of radioactive potassium by the placenta and uterus during pregnancy. All these investigations show that there is surprisingly little evidence of senescence in the placenta even at term despite the long accepted view that there should be profound morphological and biochemical changes.

Ageing of red blood cells was considered by Lovelock and by Mollison. Lovelock dealt with physical aspects of the problem and described his work on diffusion and the influence of temperature. He also commented on the possible application of information theory to problems of ageing. Mollison's paper concerned metabolic investigations suggesting that ageing of erythrocytes is probably related to exhaustion of the initial supply of irreplaceable "fuel."

Applications of electron microscopy to the study of ageing were described by Fawcett, who investigated the germinal epithelium and interstitial cells of the human testis, and by Dempsey, who studied "mitochondrial changes in different physiological states."

Wislocki also presented a paper on "the growth cycle of deer antlers." This represents a remarkably direct approach to the investigation of ageing in transient tissues. Another aspect of ageing was provided by Montagna's studies on the apocrine sweat glands in axillary skin biopsies from normal young women, several pregnant women, and from older women up to 78 years of age.

The process of ageing as seen by the botanist was described by Yemm. In senescent, yellowing leaves respiration continues at a high rate but catabolic changes predominate in protein metabolism.

This volume provides an interesting appraisal of current investigations on ageing in transient tissues. The papers are in a pleasant, somewhat conversational style. The informal discussions add to the value and interest of the proceedings. The participation of the audience and the effective but not rigid guidance of the chairman are exemplary.

W. G. B. CASSELMAN, M. D.,
University of Toronto

CASE BOOK IN ABNORMAL PSYCHOLOGY. By *Henry Weinberg* and *A. William Hire*. (New York: Alfred A. Knopf, 1956, pp. 320. $4.50.)

This is a handy opus, containing twenty cases which include major areas of psychological abnormalities. Among these are child, adult, neurotic, organic and psychotic entities. The functions and development of each disorder in the total growth pattern of the individual is pointed up.

The cases are offered minus interpretation and with no comment, other than a general introduction to the book and a specific label on each case presented. This contribution can be employed for any theoretical orientation and for whatever depth analysis is being considered. In this respect, the book provides a broad structural basis for examining the material presented.

ARTHUR LERNER, PH. D.,
Los Angeles City College.

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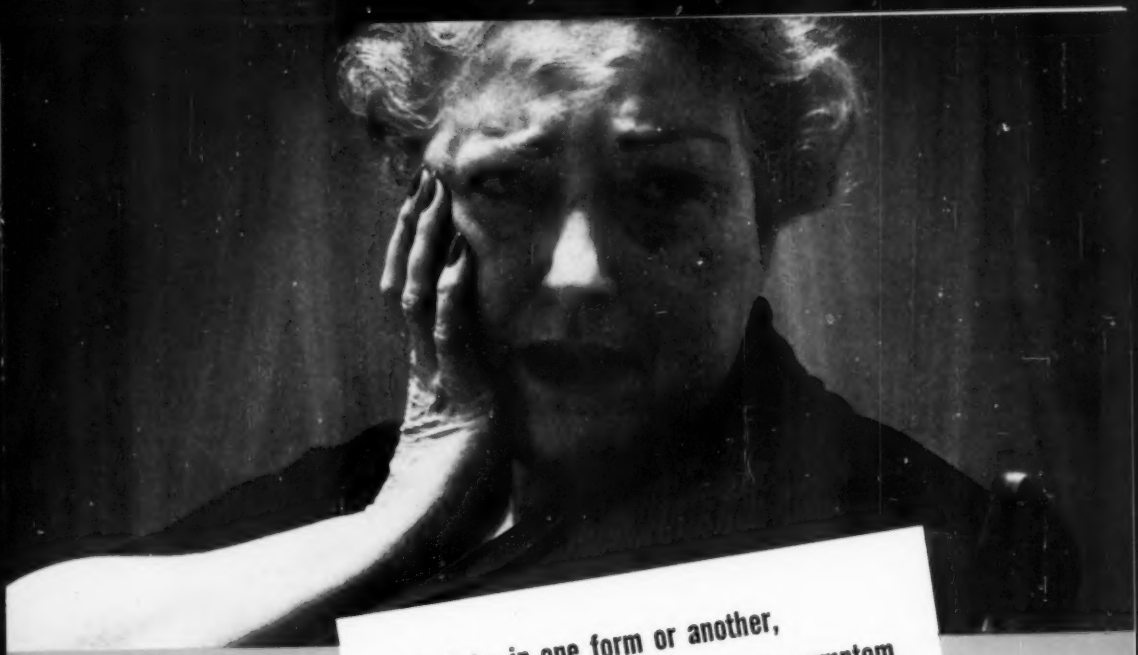

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1. Hollister, L.H., et al.: Dis. Nerv. System *17*:289 (Sept.) 1956.

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References: 1. Rinaldi, F.; Rudy, L. H., and Himwich, H. E.: Am. J. Psych. 112:343, 1955. 2. Browne, N. L. M.: J. Nerv. & Ment. Dis. 123:130, 1956. 3. Coats, E. A., and Gray, R. W.: Nebraska St. M. J. 41:460, 1956. 4. Cohen, S., and Parlaur, R. R.: J.A.M.A. 162:948, 1956. 5. Feldman, P. E.: Am. J. Psych. 113:589, 1957. 6. Bowes, H. A.: Am. J. Psych. 113:530, 1956.

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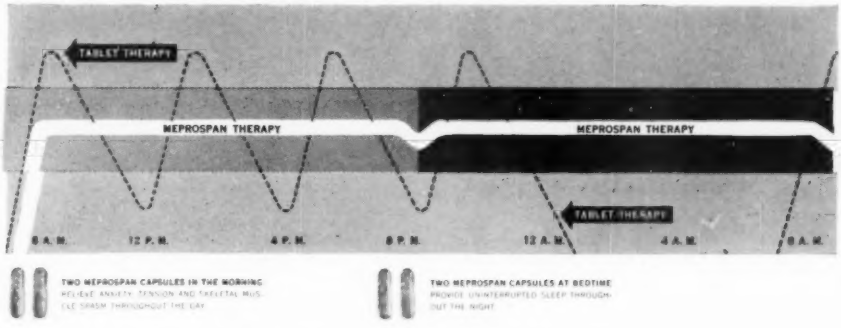

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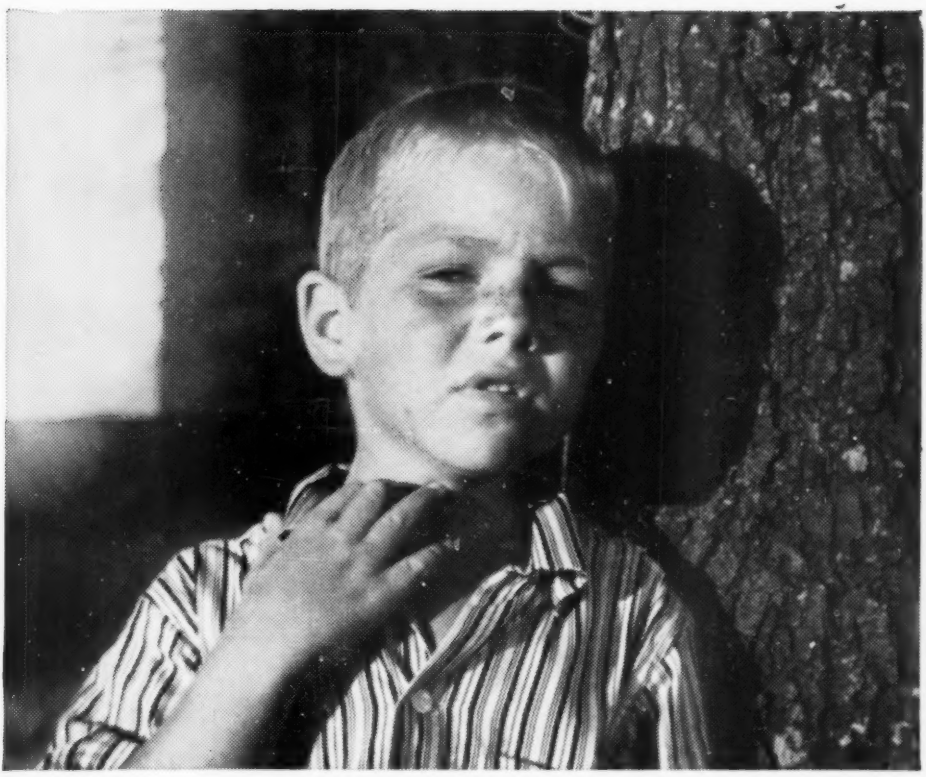

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